Model Examinations of the School Book

Model 1

Answer the following questions :

1 **Choose the correct answer from those given :**

(1) $(-1)^8 + (-1)^9 =$ .... (zero or -1 or 1 or 2)

(2) The image of the point $(-3, 4)$ by translation $(x, y-4)$ is ....

($(-3, 0)$ or $(-7, 4)$ or $(-3, 8)$ or $(-1, 4)$)

(3) $\{0\}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(4) When tossing a die once, then probability of getting a number on the upper face more than 6 = ... ($\varnothing$ or zero or $\frac{1}{6}$ or $\frac{1}{3}$)

2 **Complete the following :**

(1) $\left|\frac{5-11}{3}\right|$ .... $\mathbb{Z}$

(2) If $x + 6 = 2$, $x \in \mathbb{Z}$, then $x =$ ....

(3) **In the opposite figure :**

ABCD is a rectangle

, then the area of Δ ABC

= .... cm^2.

(4) A box contains 5 white balls , 3 blue balls and 8 red balls all of them are symmetric. One ball is drawn from the box at random. Then the probability that the drawn ball is red = ...

3 [a] Find the result of : $4 \times 3^2 \div 3^2 - 7 \times 3$

[b] Find the solution set of the inequality : $x - 2 \geq 3$, $x \in \mathbb{Z}$

4 [a] A cuboid-shaped box with a square base its length is 10 cm. and its height is 7 cm. Calculate the lateral area.

[b] The circumference of a circle is 88 cm. Calculate its area.

5 [a] Find the solution set of the equation : $3x + 9 = 3$, $x \in \mathbb{Z}$

[b] **The following table shows the percentage of the production of a factory of house electrical sets :**

The kind of set	Washig machine	Heater	Oven	Mixer
The percentage	30 %	15 %	40 %	15 %

Represent these data by circular sectors.

Model 2

Answer the following questions :

1 Choose the correct answer from those given :

(1) If $2x = -6$, then $x \in$ .... ($\mathbb{N}$ or $\varnothing$ or $\mathbb{Z}^+$ or $\mathbb{Z}^-$)

(2) The circumference of the circle = ... $\times \pi$
(r or 2 r or r^2 or r + 2)

(3) When tossing a die once , then the probability of getting the number 5 = ... (zero or $\frac{1}{6}$ or $\frac{5}{6}$ or 1)

(4) The number which satisfies the inequality : $x > -2$ is ....
(−1 or −2 or −3 or −4)

2 Complete the following :

(1) $\frac{2^3 \times 2^5}{2^2} =$ ....

(2) The set of counting numbers (C) .... $\mathbb{N}$

(3) A cube of total area 150 cm^2 , then the length of its edge is .... cm.

(4) In a 6^{th} primary class , the marks of the students are given in the following table :

Excellent	Very good	Good	Weak
8	18	16	6

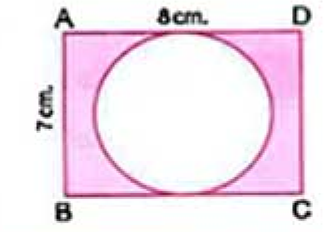
If one of students is randownly chosen , then the probability that this pupil got good degree is ....

3 [a] Find the result of : $6 \times -5 - (2 \times 3) \div 3$

[b] Find the solution set of the inequality : $x - 2 \geq 3$ where $x \in \mathbb{Z}$, then represent it on the number line.

4 **[a]** Find the solution set of the equation : $2x + 9 = 5$, where $x \in \mathbb{Z}$

[b] **In the opposite figure :**



ABCD is a rectangle where its length = 8 cm.

and its width = 7 cm.

Calculate the area of shaded part.

5 **[a]** In a Cartesian coordinates plane , locate the points A (2 , 3) , B (4 , 3) and C (4 , 7) , then find :

(1) The length of $\overline{BC}$

(2) The image of Δ ABC by translation (0 , – 4)

[b] **The following table shows the number of students partcipating in the school activties :**

The activity	Cultural	Sports	Social	Arts
The percentage	5 %	45 %	15 %	35 %

Represent these data by circular sectors.

Model examination for the special needs students

Answer the following questions :

1 Complete the following :

(1) $|3|$ = ...

(2) The probability of the impossible event = ...

(3) If $x + 2 = 3$, $x \in \mathbb{N}$, then x = ...

(4) The perimeter of the base of a cuboid is 10 cm. , its height is 4 cm. , then its lateral area = ... cm^2.

2 Choose the correct answer from those given :

(1) $2^5 \times 2^2$ = ... (2^7 *or* 4^7 *or* 1)

(2) The surface area of a circle = $\pi \times$ .... (r *or* r^2 *or* 2 r)

(3) $\mathbb{Z}^+ \cup \{0\}$ = ... ($\mathbb{Z}^-$ *or* $\mathbb{N}$ *or* $\mathbb{Z}$)

(4) When tossing a fair die once , then the probability of getting an odd number = ... ($\frac{1}{6}$ *or* $\frac{1}{3}$ *or* $\frac{1}{2}$)

3 Put true (✔) or false (✘) :

(1) $|-5| + 5 = 10$ ( )

(2) If $3x = 9$, then $x = -3$ ( )

(3) The probability of the sure event = zero ( )

(4) **In the opposite figure :**

The distance between the points A and B = 2 units. ( )

4 **Join from column (A) to column (B) :**

A
(1) The sum of the measures of the angles of the sectors about the centre of the circle = ...
(2) 2 .... $\mathbb{Z}^+$
(3) The solution set of the inequality : $x + 2 < 5$, where $x \in \mathbb{N}$ is ....
(4) The image of the point (3 , 2) by transtation (1 , 2) is ....

B
$\in$
360°
(4 , 4)
{0 , 1 , 2}

5 **[a] Complete the following :**

The length of the edge of a cube is 4 cm. Calculate its total area and lateral area :

The total area = 6 × .... = ... cm^2.

The lateral area = 4 × .... = ... cm^2.

[b] Find the result of : $\frac{2^3 \times (-2)^4}{2^5}$

$\frac{2^3 \times 2^4}{2^5} = \frac{2^{\cdots + \cdots}}{2^5} = 2^{\cdots} = \cdots\cdots$

Model Examinations

Model 1

Answer the following questions :

1 Choose the correct answer :

(1) A fair die is thrown once , then the probability of appearing the number 3 equals .... (0 or $\frac{1}{6}$ or $\frac{1}{3}$ or $\frac{1}{2}$)

(2) The solution set of the equation : $2x = -6$ in $\mathbb{N}$ is .... ($\{-3\}$ or $\{3\}$ or $\{2\}$ or $\varnothing$)

(3) $\{|-13|\}$ .... $\mathbb{Z}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(4) If $x + 5 \geq 2$, then $x \geq$ .... (3 or -3 or 7 or -7)

(5) The integer that lies between -4 and -1 is .... (-2 or -5 or 3 or -4)

(6) $(-5)^2 \times (2)^2 =$ .... (10^0 or 10 or $(10)^2$ or $(10)^3$)

(7) If A is an event in a sample space S , P (A) = 1 , then A is .... event. (impossible or simple or sure or independent)

2 Complete each of the following :

(1) $\mathbb{Z}^+ - \mathbb{Z}^- = \mathbb{N} -$ ....

(2) $14 + 213 + (-14) =$ ....

(3) The sum of edge lengths of a cube is 84 cm. , then its lateral area equals .... cm^2

(4) The image of the point $(2 , -1)$ by translation 3 units in the positive direction of y-axis is ....

(5) If $x + 6 = 2$, where $x \in \mathbb{Z}$, then $x =$ ....

(6) $(4 \times 3 + 3) - (7 \times 3) =$ ....

(7) If $x = |-3|$, $y = -2$, then $2xy =$ ....

(8) $\frac{1}{3}$, $\frac{2}{3}$, 1 , $\frac{4}{3}$, ... , ... (in the same pattern)

3 Choose the correct answer :

(1) The multiplicative identity element in $\mathbb{Z}$ is .... (-1 or 1 or 0 or 2)

(2) $\mathbb{Z}^+ \cap \mathbb{Z}^- =$ .... ($\{0\}$ or $\varnothing$ or $\mathbb{Z}$ or zero)

(3) The surface area of the circle = ... (πr or πr^2 or $2\pi r$ or $2\pi r^2$)

(4) $3 - |-3| =$ .... (0 or 1 or 3 or 6)

(5) The additive inverse of $(-5)^2$ is .... (25 or 5 or -5 or -25)

(6) $27 \div (-3)^2 =$ .... (-9 or 24 or 3 or 81)

(7) The measure of the angle for the sector of third of a circle is ....

(90° or 120° or 180° or 270°)

4 **Answer the following :**

(1) The circumference of a circle is 88 cm. Calculate its area. (Consider $\pi = \frac{22}{7}$)

....

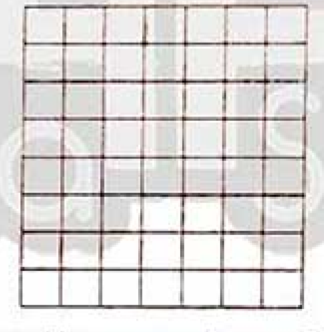
....

(2) Find the solution set of the inequality : $2x + 1 \leq 7$ where $x \in \mathbb{Z}$

....

....

(3) In the cartesian coordinates plane , locate each of the following points A (1 , 1) , B (3 , 1) and C (3 , 3) , then find the image of Δ ABC by translation $(x - 2 , y + 2)$



(4) The following table shows the percentage of egg production in three farms , a merchant collected these eggs to distribute them on the grocery stores :

The farm	First	Second	Third
The percentage of the production	25%	35%	40%

Represent these data by using the circular sectors.

....

....

....

Model 2

Answer the following questions :

1 Choose the correct answer :

(1) If $x + 2 = -3$, then $x =$ .... $(-1$ or 1 or 5 or $-5)$

(2) $\mathbb{Z} = \mathbb{N} \cup$ .... $(\mathbb{Z}^+$ or $\mathbb{Z}^-$ or $\{0\}$ or $\varnothing)$

(3) If the lateral area of a cube is 36 cm^2, then its total area = ... cm^2.

(144 or 81 or 54 or 96)

(4) -8 .... $\mathbb{Z}$ $(\in$ or $\notin$ or $\subset$ or $\not\subset)$

(5) $|-5| + 7 =$ .... (2 or zero or 7 or 12)

(6) $(-1)^3 + 2 =$ .... $(3$ or -1 or -3 or $1)$

(7) If S is the sample space of a random experiment, then P (S) = ...

$(\varnothing$ or zero or -1 or $1)$

2 Complete each of the following :

(1) At throwing a fair die once, then the probability of appearing an even prime number = ...

(2) 1, 4, 7, 10, ..., ... (in the same pattern)

(3) A cuboid its lateral area 120 cm^2 and the perimeter of its base 20 cm., then its height = ... cm.

(4) If X (– 4, 1) and Y (– 4, – 3), then the length of $\overline{XY}$ = ... units.

(5) The measure of the angle of the sector whose area represents $\frac{1}{8}$ the surface area of the circle = ...°

(6) $\frac{8^3 \times 8^4}{8^7} =$ ....

(7) The image of the point (2, 4) by the translation $(x - 1, y + 1)$ is ....

(8) The equation $2x^3 + 2x = 1$ is of the .... degree.

3 Choose the correct answer :

(1) An integer between -1, 2 is .... $(-2$ or 3 or zero or $-3)$

(2) The set of counting numbers .... $\mathbb{N}$ $(\in$ or $\notin$ or $\subset$ or $\not\subset)$

(3) The multiplicative neutral element in $\mathbb{Z}$ is .... $(0$ or 1 or -1 or $2)$

(4) $|-11|$ .... 11 $(>$ or $<$ or $=$ or $\leq)$

(5) The number that satisfies the inequality $x < -2$ is ....

(-3 or -2 or -1 or 0)

(6) $5^2 \times 2^2 =$ ....

(5^4 or 2^4 or 10^2 or 10^4)

(7) $\{(-1)^{zero}, (zero)^2\}$ .... $\mathbb{Z}$

($\in$ or $\notin$ or $\subset$ or $\not\subset$)

4 Answer the following :

(1) Find the solution set of the equation : $2x - 3 = -9$ where $x \in \mathbb{Z}$

....

....

(2) A cuboid box with a square base of side length 6 cm. and its height is 10 cm. Calculate its lateral surface area and its total surface area.

....

....

....

(3) Use the distributive proberty to find the result of : $32 \times 117 - 32 \times 17$

....

....

(4) The following table shows the degrees of a classroom in maths test in one month :

Assessment	Excellent	Very good	Good	Weak
Number of pupils	9	14	10	7

Represent these data by a pie chart.

....

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Model 3

Answer the following questions :

1 Choose the correct answer :

(1) The image of point (3 , – 2) by translation (4 , 2) is ....
((7 , 0) or (– 7 , 0) or (– 1 , 4) or (1 , 7))

(2) The measure of the angle for the circular sector of a quarter of the circle = ...
(30° or 45° or 60° or 90°)

(3) Which of the following can be probability of an event ?
(1.2 or $\frac{17}{16}$ or 5^0 or 101%)

(4) The number which satisfies the inequality $x - 2 > 3$ is ....
(3 or 4 or 5 or 6)

(5) A class of 50 pupils. If the probability of success for those pupils at the end year exam is 0.9 , then the expected number for the pupils who will success equals .... (50 or 45 or 25 or 9)

(6) $(5)^{zero}$ = ... (zero or 5 or 1 or 50)

(7) $\frac{3}{5}$ .... $\mathbb{Z}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 Complete each of the following :

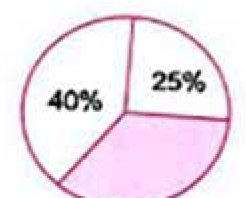
(1) If X (– 3 , 2) , Y (– 3 , – 4) , then the length of $\overline{XY}$ = ... units.

(2) The sum of edge lengths of a cube is 96 cm. , then its lateral area = ... cm².

(3) (4 × 3 + 3) – (7 × 3) = ...

(4) The surface area of the circle of diameter 20 cm. = ... π cm².

(5) **In the opposite figure :**
The percentage of the shaded circular sector equals .... %



(6) $(-1)^2 - 1$ = ...

(7) 25 , 21 , 17 , 13 , ... , ... (in the same pattern)

(8) If 2 y = 8 , then y + 3 = ...

3 Choose the correct answer :

(1) $|-3| + |3| =$ .... (zero or 1 or -6 or 6)

(2) If $x + 1 = 2$, then $x =$ .... where $x \in \mathbb{N}$ (3 or 1 or -1 or -3)

(3) $3^5 + 3^2 =$ .... (3^7 or 3^{10} or 3^3 or 3^2)

(4) $\mathbb{N}^+ \cap \mathbb{Z}^- =$ .... ($\mathbb{Z}$ or $\mathbb{Z}^+$ or $\mathbb{N}$ or $\varnothing$)

(5) The number of integers between -1 and 3 is ....

(-2 or -1 or 3 or -3)

(6) {zero} .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(7) The equation : $2x - 1 = 15$ is of the .... degree.

(first or second or third or fourth)

4 Answer the following :

(1) A box without a lid , in the form of a cuboid its length is 16 cm.

, its width is 7 cm. and its height is 19 cm.

Calculate each of its lateral area and its total area.

....

....

....

(2) In the experiment of forming a 2-digit number from the digits {3 , 5}

Write the sample space , then find the probability of each of the following :

[a] The envent A is the units digit equals the tens digit.

[b] The event B is the tens digit is an odd digit.

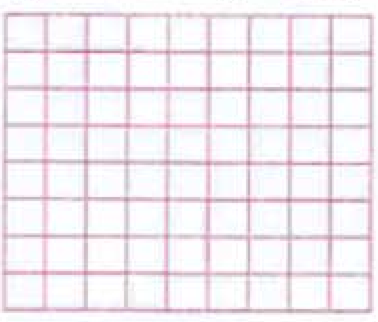
[c] The event C is the units digit is an even digit.

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....

....

(3) In the corrdinates plane , find the image of the line segment $\overline{AB}$ where A (2 , 3) , B (– 2 , 0) by translation (x + 3 , y – 2)



(4) The following table shows the percentage of the production of a factory of house electrical sets :

The kind of set	Washing machine	Heater	Oven	Mixer
The percentage	20 %	15 %	40 %	25 %

Represent these data by circular sectors.

....

....

....

....

Model 4

Answer the following questions :

1 Choose the correct answer :

(1) 9^2 .... $(-3)^4$ (> or < or = or ≥)

(2) If zero ∈ {5 , x – 2} , then x = ... (zero or – 5 or 2 or – 2)

(3) $(-1)^3 - (1)^2$ = ... (– 2 or 1 or 0 or 2)

(4) The circumference of the circle = ...

(πr or πr^2 or $2\pi r$ or $2\pi r^2$)

(5) The multiplicative neutral element in $\mathbb{Z}$ is ....

(0 or 1 or 2 or – 2)

(6) The probability of getting a tail when throwing a coin once is ....

(0 or $\frac{1}{6}$ or 1 or $\frac{1}{2}$)

(7) A circle is of diameter length 10 cm. , then its area = ... cm^2.

(50 or 100 or 78.5 or 25)

2 Complete each of the following :

(1) .... is the set of all possible outcomes for a random experiment.

(2) $(2)^3 \times (-1)^2 \div 8 =$ ....

(3) $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{12}$, $\frac{1}{24}$, ... , ... (in the same pattern)

(4) The measure of the central angle of the circular sector whose area represents $\frac{3}{5}$ from the surface area of the circle = ...°

(5) If $x + 2 = |-4|$, then the solution set = ...

(6) If 2 y = 6 , then y – 5 = ...

(7) $-4\,[3 + (-1)] =$ ....

(8) The solution set of the inequality $x + 1 \leq 5$, where $x \in \mathbb{N}$ is ....

3 Choose the correct answer :

(1) The number that satisfies the inequality $x > -4$ is ....
(–5 or –6 or –4 or –3)

(2) The image of the point (4 , – 2) by translation $(x + 2 , y - 1)$ is ....
((2 , – 1) or (6 , – 3) or (2 , – 2) or (2 , – 3))

(3) $(-100)^{zero} =$ .... (– 100 or 100 or zero or 1)

(4) $|-4| - |4| =$ .... (zero or 1 or 8 or – 8)

(5) If $x + 1 = 2$, then $x =$ .... where $x \in \mathbb{N}$ (3 or 1 or – 1 or – 3)

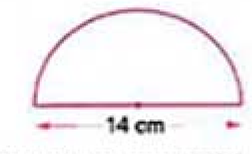
(6) A cuboid with a square base , its lateral area is 224 cm² , its height is 14 cm. , then the side length of its base is .... cm. (14 or 4 or 2 or 3)

(7) $\left\{\frac{2}{3-4}\right\}$ .... $\mathbb{Z}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

4 Answer the following :

(1) Find the area of the opposite figure :

(Consider $\pi = \frac{22}{7}$)



....

(2) Find the solution set of the inequality : $2 - x > 3$, where $x \in \mathbb{Z}$

....

....

(3) Use the distributive property to find the result of : $43 \times 44 + 43 \times 56$

....

(4) The following table shows the percentage of four favorite sports in one of a youth center :

The favorite sports	Football	Volleyball	Basketball	Swimming
The percentage of players	40%	20%	15%	.... %

Complete the table , then represent these data by circular sectors.

....
....
....
....

Model 5

Answer the following questions :

1 Choose the correct answer :

(1) If $3x = -9$, $x \in \mathbb{Z}$, then $x + 1 =$ .... (-3 or -2 or -1 or 4)

(2) The lateral area of the cube = area of one face × ....

(6 or 5 or 4 or 3)

(3) If X $(-2 , 1)$ and Y $(3 , 1)$, then the length of $\overline{XY}$ = ... units.

(0 or 1 or 3 or 5)

(4) If $\varnothing$ is the empty set , then P $(\varnothing)$ = ... (zero or 5 or 1 or 2)

(5) $(-3) \times |-5| =$ .... (15 or -15 or 8 or -8)

(6) $9^7 \div 9^5 =$ .... (9^{-12} or 9^2 or 9^{zero} or 9^{35})

(7) The next number in the pattern : 2 , 3 , 5 , 8 , 13 is ....

(18 or 19 or 20 or 21)

2 Complete each of the following :

(1) The measure of the angle of the sector whose area represents $\frac{3}{4}$ the surface area of the circle = ...°

(2) If the probability of success of a pupil is $\frac{2}{3}$, then the probability of his failure is ....

(3) The solution set of the inequality $x + 1 < 5$, $x \in \mathbb{N}$ is ....

(4) $(-1)^2 - 1 =$ ....

(5) The height of a cuboid whose total surface area is 400 cm^2 and its base is in the shape of a square of side length = 10 cm. equals .... cm.

(6) $85 = 5 + (8 \times 1) + (8 \times$ ....$)$

(7) If $x = |-12|$, $y = -3$, then $x + y =$ ....

(8) The greatest negative integer is ....

3 Choose the correct answer :

(1) The image of the point $(-3, 4)$ by translation $(x, y - 4)$ is ....
($(-3, 0)$ or $(-7, 4)$ or $(-3, 8)$ or $(-1, 4)$)

(2) A circle of diameter length 8 cm. , then its area = ... π cm^2.
(4 or 8 or 16 or 64)

(3) The number that satisfies the inequality : $x - 2 > 3$ is ....
(3 or 4 or 5 or 6)

(4) If $a < b$, then $-3a$ .... $-3b$ ($<$ or $>$ or $=$ or $\leq$)

(5) $\mathbb{Z} \cap \mathbb{N} =$ .... ($\mathbb{Z}^+$ or $\mathbb{Z}$ or $\{0\}$ or $\mathbb{N}$)

(6) $-|-6| + 6$ .... $\mathbb{Z}^+$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(7) The equation : $x^3 + 1 = 10$ is of the .... degree.
(first or second or third or fourth)

4 Answer the following :

(1) Find the solution set of : $2x - 8 = -26$, where $x \in \mathbb{N}$

....

....

(2) Find the value of : $\frac{(-2)^4 \times (2)^6}{(2)^5 \times (-2)}$

....

....

(3) A box contains 4 white balls , 6 red balls and 5 blue balls , all the balls are identical , a ball is chosen randomly , find the probability that the chosen ball is :

[a] White. **[b]** Not red.

....

....

(4) The following table shows the percentage of the number of students in one classroom according to their favorite activities :

Activity	Sports	Reading	Music	Computer
Percentage	10%	15%	35%	40%

Represent these data by a pie chart.

....

....

....

....

Some Schools' Examinations from Different Governorates

1 Cairo Governorate

Heliopolis Educational Directorate
Al-Shahid El-Ashery L. School



Answer the following questions :

1 Choose the correct answer :

(1) $(-19)^0 + (19)^0 = \dots\dots$ $(-1$ or zero or 1 or $2)$

(2) $\mathbb{Z} - \mathbb{N} = \dots\dots$ $(\mathbb{Z}^+$ or $\{0\}$ or $\mathbb{Z}^-$ or $0)$

(3) The height of the cuboid whose lateral area is 160 cm² and the dimensions of its base are 3 cm. and 7 cm. equals .... cm.

(6 or 8 or 10 or 16)

(4) The image of the point A $(-4, 3)$ by translation $(-1, -4)$ is ....

$((-5, -7)$ or $(-5, -1)$ or $(-7, 3)$ or $(-3, -1))$

(5) If $a \in \{2, -5, -3\} \cap \{5, -2, -3\}$, then $a = \dots\dots$

$(2$ or -3 or -5 or $5)$

(6) The probability of impossible event = ... (0 or 1 or 0.5 or 1.2)

2 Choose the correct answer :

(1) $(|-9| + 3) + 2 \dots\dots \mathbb{Z}$ $(\in$ or $\notin$ or $\subset$ or $\not\subset)$

(2) A cube the perimeter of its base is 36 cm. , then its lateral area = ... cm².

(9 or 324 or 36 or 486)

(3) The number which satisfies the inequality : $x > -2$ is ....

$(1$ or -4 or -3 or $-2)$

(4) The measure of the angle of the sector which represents $\frac{1}{4}$ the circle equals .... $(30°$ or $45°$ or $90°$ or $60°)$

(5) $(-1)^{104} + (-1)^{103} = \dots\dots$ $(0$ or 2 or -1 or $1)$

(6) $3^2 + 3^2 + 3^2 = \dots\dots$ $(2^6$ or 4^6 or 3^3 or $2^9)$

3 Complete the following :

(1) $\mathbb{Z} = \mathbb{N} \cup \dots\dots$

(2) If $x + 3 = |-7|$, then $x = \dots\dots$

(3) The edge length of the cube whose total area is 600 cm² is ....

(4) The set of solution of the inequality : $-2 < x \le$ zero in $\mathbb{Z}$ is ....

(5) The lateral area of the cuboid whose length is 6 cm. and width is 4 cm. and its height is 5 cm. equals ....

(6) A fair die is thrown once , then the probability of appearing the number 5 equals ....

(7) A circle of diameter length 14 cm. , then its area = ... cm^2 $(\pi = \frac{22}{7})$

(8) If a = 3 , b = – 2 , then 3 a b = ...

4 [a] Find the result of : $\frac{5^{11} \times 5^4}{5^7 \times 5^6}$

....

....

[b] Find in ℕ the set of solution of the inequality : $3x - 2 < 7$

....

....

[c] A circle of radius length 10 cm. is divided into 8 equal circular sectors.

Find the area of one circular sector. (consider π = 3.14)

....

....

5 [a] In a Cartesian coordinates plane , locate the points A (0 , 4) , B (2 , 1) , C (– 2 , 1) , then find the image of Δ ABC by translation (0 , – 2)

....

....

....

....

[b] The following table shows the percentage of the production of a factory of house electrical sets :

The kind of set	Washing machine	Heater	Oven	Mixture
The percentage	30 %	15 %	40 %	15 %

Represent these data by circular sectors.

....

....

....

....

2 Cairo Governorate

Nasr City East Educational Directorate
Manaret El-Eman Language Schools



Answer the following questions :

1 Choose the correct answer :

(1) The set of non-negative integers is .... (C or $\mathbb{Z}$ or {0} or $\mathbb{N}$)

(2) The equation : $2^6 + x^5 = 100$ is of the .... degree.
(11^{th} or 5^{th} or 6^{th} or 1^{st})

(3) If Ø is the empty set , then P (Ø) = ... (1 or 2 or 0 or 0.5)

(4) The area of the circle whose radius length is 2 π cm. is .... cm^2
(4 π or $2\pi^2$ or 12.56 or $4\pi^3$)

(5) The integer which satisfies the inequality : y < – 3 is ....
(–2 or –8 or 0 or 1)

(6) If $3x = -9$, then $-5x$ = ... (15 or 9 or –15 or –|–15|)

2 Choose the correct answer :

(7) The image of the point (4 , –2) by translation two units in the positive direction of the y-axis is ....
((4 , 2) or (2 , –2) or (6 , –2) or (4 , 0))

(8) The L.S.A. of the cuboid whose dimensions are 3 cm. , 4 cm. and 0.6 dm. is .... (72 cm^2 or 8.4 dm^2 or 84 dm^2 or 84 cm^2)

(9) -9^3 .... $(-3)^2$ (< or = or > or ≥)

(10) $\mathbb{Z}^+ \cap \mathbb{Z}^-$ = ... ($\mathbb{Z}$ or $\mathbb{N}$ or 0 or { })

(11) Half the T.S.A. of a cube whose sum of its edge lengths is 36 cm. is .... cm^2 (108 or 27 or 54 or 18)

(12) A box contains 14 balls , 5 red , 3 green and the rest are yellow , then the probability of selecting a non-red ball is .... ($\frac{3}{7}$ or $\frac{5}{14}$ or $\frac{9}{14}$ or $\frac{4}{7}$)

3 Complete :

(1) The ratio between the T.S.A. and L.S.A. of the cube is ....

(2) If A (2 , 9) , B (–4 , 9) , then the length of $\overline{AB}$ = ... length units.

(3) The probability of appearing an odd prime number when rolling a die once is ....

(4) The circumference of the circle whose area is 452.16 cm^2 is ....
(π = 3.14)

(5) $((-7)^3 \times 7^4) \div (-7)^5 =$ ....

(6) The S.S. of the inequality $3 + 4x > -9$ in $\mathbb{Z}$ is ....

(7) The volume of a cube whose L.S.A. is 144 cm^2 is .... cm^3.

(8) The measure of the central angle which represents $\frac{1}{9}$ of the circle is ....

4 Answer the following :

(1) Find the S.S of the equation : $2x - 3 = -9$ in $\mathbb{Z}$ and in $\mathbb{N}$

....

....

(2) Use the distributive property to find the result : $25 \times 9 + 25 - 25 \times 9$

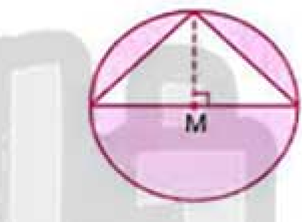
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(3) Find the area of the shaded part



, if the radius length = 7 cm. $\left(\pi = \frac{22}{7}\right)$

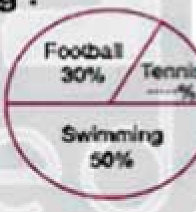


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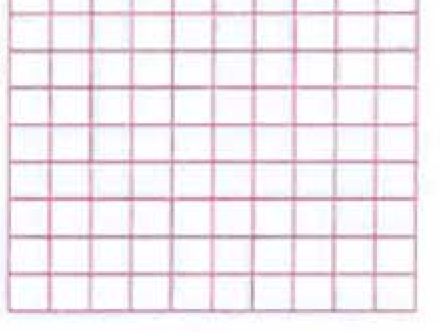
(4) Notice the opposite pie chart , then complete the following :



[a] The percentage of the tennis players is ....

[b] The measure of the angle of the sector which represents the football players is ....

(5) In the coordinate plane , draw the figure ABCD , where :
A (3 , 1) , B (1 , 3) , C (3 , 5) and D (5 , 3)
, then draw its image by translation $(x - 4 , y - 4)$
What is the area of the image of the figure ?



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3 Giza Governorate

El-Dokki Educational Directorate
Orouba Language School



Answer the following questions :

1 Choose the correct answer :

(1) $(-1)^{12} + (-1)^{13} =$ .... (0 or 1 or 2 or −1)

(2) $5 \times 5^2 =$ .... (25^2 or 25^3 or 5^2 or 5^3)

(3) If $x - 5 = 7$, $x \in \mathbb{N}$, then $x =$ .... (2 or 12 or −12 or 35)

(4) The image of the point (4 , 5) by translation (0 , −4) is ....
((4 , 9) or (5 , 1) or (4 , 1) or (4 , −1))

(5) When tossing a dice once , then the probability of getting a number less than 1 = ... ($\varnothing$ or 0 or $\frac{1}{6}$ or 1)

(6) The set of odd numbers $\cap$ the set of even numbers = ...
(0 or $\mathbb{N}$ or $\mathbb{Z}$ or $\varnothing$)

(7) A circle , its circumference is 44 cm. , then the length of its radius = ... cm. $\left(\pi = \frac{22}{7}\right)$ (22 or 11 or 7 or 14)

(8) $\left|\frac{6-12}{3}\right|$ .... $\mathbb{N}$ ($\notin$ or $\in$ or $\not\subset$ or $\subset$)

(9) If $2x = 6$, then $4x =$ .... (3 or 6 or 12 or 16)

(10) If $x + 2 < 2$, then $x \in$ .... ($\mathbb{N}$ or $\varnothing$ or $\mathbb{Z}^+$ or $\mathbb{Z}^-$)

(11) A box contains 10 cards numbered from 1 to 10 , one card is selected at random , then the probability of getting a number divisible by 5 = ...
($\frac{1}{2}$ or $\frac{1}{5}$ or $\frac{3}{10}$ or $\frac{2}{5}$)

(12) **In the opposite figure :**
The distance between the two points A and B = ... units.

(2 or −2 or 1 or 3)

2 Complete :

(1) $4 \times 3^2 + 3^2 - 7 \times 3 =$ ....

(2) If $x + 3 = |-6|$, then $x =$ ....

(3) The sum of the measures of the angles of the sectors about the centre of the circle = ...

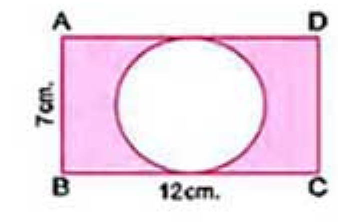
(4) The equation : $x^2 + 3 = 8$, then the equation is of .... degree.

(5) A box contains 15 balls all of them are symmetric , 5 white balls , 4 blue balls and the rest are red balls , one ball is drawn from the box at random , then the probability that the drawn ball is red = ...

(6) The image of the point $(-1 , 2)$ by translation of 3 units in the positive direction of the x-axis is ....

(7) The lateral area of a cuboid with a square base its length is 10 cm. and its height is 9 cm. = ...

(8) In the opposite figure :



ABCD is a rectangle , its length is 12 cm. , its width is 7 cm. A circle is drawn to touch the sides $\overline{AD}$ and $\overline{BC}$, then the area of the shaded part = ... $\left(\pi = \frac{22}{7}\right)$

3 Answer the following :

(1) Find the result of : $\frac{(-4)^{11} \times 4^{3}}{4^{12}}$

....

....

(2) Find the solution set of the inequality : $2x + 9 < 1$ in $\mathbb{Z}$ and represent it on the number line.

....

....

(3) A container water tank in the form of a cube , its inner edge length is 1.5 m. It is wanted to paint it to prevent the rust. The cost price of one square metre is L.E. 15 , calculate the cost of painting.

....

....

(4) On the coordinate plane :

Locate the points A $(3 , -2)$, B $(1 , 1)$ and C $(3 , 1)$, then :

[a] Find the length of $\overline{BC}$

[b] Draw the image of $\triangle ABC$ by translation $(x + 2 , y + 3)$

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(5) The following table shows the percentage of the favourite sport for your class students :

The favourite sport	Football	Basketball	Volleyball	Swimming
The percentage	45 %	10 %	25 %	20 %

Represent these data by using the circular sectors.

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4 Alexandria Governorate

East Educational Zone
Maths Supervision



Answer the following questions :

1 Choose the correct answer from those between brackets :

(1) $\mathbb{Z} = \mathbb{N} \cup$ .... ($\{0\}$ or $\varnothing$ or $\mathbb{Z}^+$ or $\mathbb{Z}^-$)

(2) $\{0\}$ .... $\mathbb{Z}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(3) If $x \in \{2, 5, -3\} \cap \{-5, -2, -3\}$
, then $x =$ .... (-5 or -3 or -2 or 2)

(4) $(9)^2$ .... $(-3)^4$ ($>$ or $<$ or $=$ or otherwise)

(5) (-7) .... $(-|-5|)$ ($>$ or $<$ or $=$ or otherwise)

(6) The solution set of the equation : $x - 2 = 3$ in $\mathbb{Z}$ is ....
(5 or 1 or $\{5\}$ or $\{3\}$)

(7) The number which satisfies the inequality : $x + 4 > 2$ is ....
(-1 or -2 or -3 or -4)

(8) A cube of edge length 6 cm. , then its lateral area = ... cm^2.
(216 or 180 or 144 or 108)

(9) The image of the point (.............. , ...) by translation $(x - 3, y + 4)$
is $(-5, -3)$ ($(-8, 15)$ or $(-2, 7)$ or $(-8, 7)$ or $(-2, -7)$)

(10) The lateral area of the cube = Area of one face × ....
(2 or 4 or 6 or height)

(11) The sum of measures of the angles of the sectors about the centre of the circle = ... (100° or 150° or 180° or 360°)

(12) If $\varnothing$ is empty set , then P ($\varnothing$) = ... (0 or 2 or 1 or 0.5)

2 Complete each of the following :

(1) $|-5| + |7| =$ ....

(2) $5 \times (-3 + 7) = 5 \times (-3) + 5 \times$ ....

(3) The S.S. of the inequality : $x + 4 < 7$ in $\mathbb{N}$ is ....

(4) In the opposite coordinate plane :

A (.............. , ...)

(5) In the opposite coordinate plane :
The length of $\overline{AC} =$ .... units.

(6) If the lateral area of a cube is 100 cm^2, then its total area = ... cm^2.

(7) The perimeter of the base of a cuboid is 10 cm., its height is 4 cm., then its lateral area = ... cm^2.

(8) When tossing a die once, then probability of getting a number 5 = ...

3 Answer the following :

(1) Arrange the following numbers in an ascending order :

$-9 , 17 , |-9| , -15$ and 16

....

(2) Find the result in the simplest form by using the basic laws of repeated multiplication : $\frac{(-5)^3 \times (-5)^2}{(-5)^4}$

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(3) A circle, its diameter length is 7 cm., calculate its surface area where $\pi = \frac{22}{7}$

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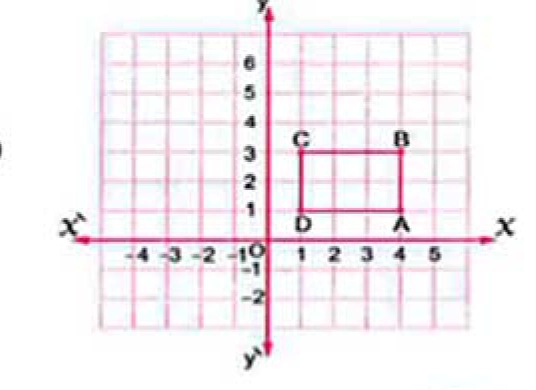
(4) In the coordinate plane :
ABCD is a rectangle where
A (4 , 1), B (4 , 3), C (1 , 3) and D (1 , 1)
, find its image by translation $(x - 5 , y + 3)$

....

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(5) The following table shows the number of students participating in the school activities :

The activity	Cultural	Sports	Social	Arts
The percentage	5 %	45 %	15 %	35 %

Represent these data by circular sectors.

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5 El-Kalyoubia Governorate

Al-Obour Educational Zone
Al-Resala Language School



Answer the following questions :

1 Choose the correct answer :

(1) $\{-3 , -\frac{1}{3}\}$ .... $\mathbb{Z}$ ($\subset$ or $\in$ or $\not\subset$ or $\notin$)

(2) $(-1)^2 \times 2^3 =$ .... (2^5 or 8 or -8 or -2^5)

(3) If $2x = 10$, then $x + 2 =$ .... (7 or 3 or 5 or 6)

(4) The equation : $x^2 + 3 = 4$ is of .... degree.
(1^{st} or 3^{rd} or 2^{nd} or 4^{th})

(5) The image of the point $(3 , -2)$ by translation $(-3 , 2)$ is ....
($(0 , 0)$ or $(3 , 0)$ or $(2 , 0)$ or $(6 , 4)$)

(6) The sum of the measures of the accumulative angles at the centre of a circle is .... (90° or 360° or 180° or 70°)

(7) When throwing a fair die once , the probability of appearing number less than 4 = ... ($\frac{5}{6}$ or $\frac{1}{2}$ or $\frac{2}{3}$ or $\frac{1}{6}$)

(8) The lateral area of a cube whose side length is 3 cm. = ... cm^2
(27 or 48 or 36 or 54)

(9) The number which satisfies the inequality : $x - 2 > 3$ is ....
(3 or 5 or 4 or 6)

(10) $2^6 \times 2^4 =$ .... (2^2 or 2^{12} or 2^{10} or 2^{24})

2 Complete the following :

(1) $12 \times$ .... $= -72$

(2) $3^7 \div 3^7 =$ ....

(3) A circle , its diameter length is 14 cm. , then its area = ... cm^2 $(\pi = \frac{22}{7})$

(4) $\mathbb{N} \cup \mathbb{Z}^- =$ ....

(5) The solution set of the equation : $3x + 2 = 8$ in $\mathbb{N}$ is ....

(6) The solution set of the inequality : $x + 5 \leq 7$ where $x \in \mathbb{Z}$ is ....

(7) A cuboid whose length is 9 cm. , width is 7 cm. and its height is 10 cm. , then its lateral area = ... and its total area = ...

(8) The greatest negative integer is ....

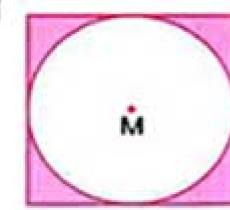
3 Answer the following :

(1) A box contains 5 white balls , 9 red balls and 4 black balls. If a ball is selected randomly , then calculate the probability that the selected balls is :

[a] White = ... [b] Black or red = ...

[c] Yellow = ... [d] Not black = ...

(2) A circle M is drawn inside a square of side length 14 cm. and touches its sides. Calculate the area of the shaded part. ($\pi \simeq 3.14$)



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(3) Arrange in an ascending order : $(-2)^3$, $(-3)^2$, $(-1)^{15}$ and $(-5)^2$

....

(4) In a Cartesian coordinate plane locate the points A (4 , 3) , B (4 , 1) , C (1 , 1) and D (1 , 3) , then find :

[a] Its image by translation $(x - 2 , y - 3)$

....

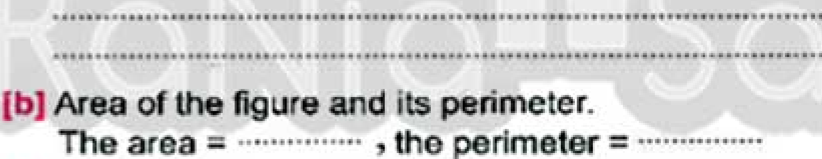
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[b] Area of the figure and its perimeter.
The area = ... , the perimeter = ...

[c] Name of the figure. (..............)





Answer the following questions :

1 Choose the correct answer :

(1) $(-1)^8 + (-1)^9 =$ .... (zero or 1 or −1 or 2)

(2) If the radius length of a circle is 10 cm. , then its surface area = ... cm^2. (Given that : $\pi = 3.14$) (3.14 or 31.4 or 314 or 3140)

(3) $\varnothing$ .... {a , b} ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(4) All the following numbers satisfy the inequlaity : $x > -3$ except ....
(zero or -1 or -2 or -3)

(5) The image of the point $(-3 , 4)$ by translation $(0 , -4)$ is (............ , ...)
($(-3 , 0)$ or $(-7 , 4)$ or $(-3 , 8)$ or $(-1 , 4)$)

(6) $\mathbb{Z} - \mathbb{Z}^- =$ .... ($\varnothing$ or $\mathbb{N}$ or $\mathbb{Z}^+$ or $\{0\}$)

(7) The measure of the angle for the circular sector of half of a circle is ....
(90° or 120° or 180° or 360°)

(8) The equation : $x + 2 = 10$ is of the .... degree.
(first or second or third or fourth)

(9) If a die is rolled once , then the probability of getting a number 5 is ....
(1 or $\frac{5}{6}$ or $\frac{1}{6}$ or $\frac{1}{5}$)

(10) If the edge length of a cube is 6 cm. , then its total area = ... cm^2.
(24 or 36 or 144 or 216)

(11) $(-5) \times |-4| =$ .... (20 or -20 or 9 or -9)

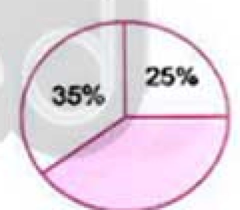
(12) $(3)^7 \div (3)^4 =$ .... ($(3)^3$ or $(3)^5$ or $(3)^{11}$ or $(3)^2$)

2 Complete each of the following :

(13) $\mathbb{Z} = \mathbb{Z}^- \cup$ .... $\cup$ ....

(14) The lateral surface area of a cuboid = ... × height.

(15) In the opposite figure :
The percentage of the shaded circular sector = ... %



(16) The probability of the impossible event equals ....

(17) If $x + 6 = 2$, where $x \in \mathbb{Z}$, then $x =$ ....

(18) The sum of measures of angles accumulative around the centre of the circle = ...°

(19) $\frac{2^3 + 2^5}{2^2} =$ ....

(20) The circumference of the circle = ... × ....

3 Answer the following :

(21) Find the solution set of the equation : $2x + 9 = 5$ where $x \in \mathbb{Z}$

....

....

....

(22) Use the properties of addition in $\mathbb{Z}$ to find the result of :
$-17 + 19 + 17$ (state the property used in each step).

....

....

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(23) A cuboid with a square shaped base of side length 7 cm. and its height is 10 cm. , calculate its lateral surface area.

....

....

(24) Find the solution set of the inequality : $x + 4 < 7$, where $x \in \mathbb{N}$

....

....

....

(25) The following table shows the favorite sport in youth centre :

Sports	Football	Basketball	Handball	Volleyball
Percentage	40 %	20 %	30 %	10 %

Represent these data by circular sector.

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7 El-Monofia Governorate

Shiben El-Kom Educational Zone
Maths Department

Answer the following questions :

1 Choose the correct answer from those between brackets :

(1) $\mathbb{Z} - \mathbb{Z}^- =$ .... ($\mathbb{Z}^+$ or $\mathbb{N}$ or $\{0\}$ or $\varnothing$)

(2) The number which satisfies the inequality : $x > -2$ is ....
(-1 or -2 or -3 or -4)

(3) The surface area of a circle $= \pi \times$ .... (r or r^2 or 2 r or $2r^2$)

(4) When tossing a die once , then the probability of getting a number 5 = ...
(zero or $\frac{1}{6}$ or $\frac{5}{6}$ or 1)

(5) $(-1)^8 + (-1)^9 =$ .... (zero or -1 or 1 or 2)

(6) If $2x = -6$, then $x \in$ .... ($\mathbb{N}$ or $\varnothing$ or $\mathbb{Z}^+$ or $\mathbb{Z}^-$)

(7) If A (− 2 , 1) and B (3 , 1) , then the length $\overline{AB}$ = ... length units.
(0 or 1 or 3 or 5)

(8) If ∅ is the empty set , then P (∅) = ... (zero or 0.5 or 1 or 2)

(9) (− 5) × | 4 | = ... (20 or − 20 or 9 or − 9)

(10) If a < b , then : − 3 a .... − 3 b (< or > or = or ∈)

(11) The image of the point (− 3 , 4) by translation (x , y − 4) is ....
((− 3 , 0) or (− 7 , 4) or (− 3 , − 8) or (− 1 , 4))

(12) The lateral surface area of the cube = area of one face × ....
(6 or 5 or 4 or 3)

2 Complete :

(1) The probability of apperance a head when tossing a coin once = ...

(2) A circle of diameter length 8 cm. , then its area = ... π cm².

(3) The lateral area of the cuboid = perimeter of the base × ....

(4) The equation : $4x^3 - x = 29$ is of .... degree.

(5) A circular sector represents $\frac{1}{3}$ of a circle , then the measure of its central angle = ...°

(6) If the area of one face of a cube equal 9 cm² , then its total area = ... cm²

(7) The solution set of the inequality : $-2 < x \leq$ zero in ℤ is ....

(8) The perimeter of one face of a cube is 12 cm. , then its total area = ... cm².

3 Answer the following :

(1) A cuboid-shaped box with a square base its length is 10 cm. and its height is 7 cm. Calculate the lateral area.

....

....

(2) Find the solution set of the equation : $2x + 9 = 3$, $x \in \mathbb{Z}$

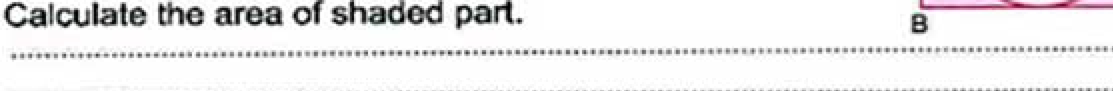
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(3) **In the opposite figure :**

ABCD is a rectangle where its length = 8 cm.
and its width = 7 cm.
Calculate the area of shaded part.

A 8 cm. D
7 cm.
B C



....

(4) Use the properties of addition in $\mathbb{Z}$ to find :

$$116 + 190 + (-116)$$

....

....

(5) The following table shows the number of students participating in the school activities :

The activity	Cultural	Sports	Social	Arts
The percentage	5 %	45 %	15 %	35 %

Represent these data by circular sectors.

....

....

....

....

8 El-Gharbia Governorate

Al-Gharbia Educational Directorate
Math's Supervision



Answer the following questions :

1 Choose the correct answer :

(1) A fair die is thrown once , then the probability of appearing the number 6 equals .... (0 or $\frac{1}{6}$ or $\frac{1}{3}$ or $\frac{1}{2}$)

(2) The solution set of the equation : $3x = -6$ in $\mathbb{N}$ is .... ($\{-3\}$ or $\{3\}$ or $\{2\}$ or $\varnothing$)

(3) If $x + 5 \geq 2$, then $x \geq$ .... (3 or -3 or 7 or -4)

(4) The integer that lies between -4 and -1 is .... (-2 or -5 or 3 or -4)

(5) $(-5)^2 \times (2)^2 =$ .... (10^0 or 10 or 10^2 or 10^3)

(6) If A is an event in a sample space S , P (A) = 1 , then A is .... event. (impossible or possible or sure)

(7) The multiplicative identity element in $\mathbb{Z}$ is .... (-1 or 1 or 0 or 2)

(8) $\mathbb{Z}^+ \cap \mathbb{Z}^- =$ .... ($\{0\}$ or $\varnothing$ or $\mathbb{Z}$ or zero)

(9) The surface area of the circle = ... (π or πr^2 or $2\pi r$ or $2\pi r^2$)

(10) The additive inverse of $(-5)^2$ is .... (25 or 5 or -5 or -25)

(11) $27 \div (-3)^2 =$ .... (-9 or 24 or 3 or 81)

(12) The measure of the angle for the sector of third of a circle is ....
(90° or 120° or 180° or 270°)

2 Complete each the following :

(1) $\mathbb{Z}^+ - \mathbb{Z}^- = \mathbb{N} -$ ....

(2) $14 + 213 + (-14) =$ ....

(3) The sum of edge lengths of a cube is 84 cm. , then its lateral area equals .... cm^2

(4) The result of : $2^3 \times (-1)^2 \div 8 =$ ....

(5) If $x + 6 = 2$, where $x \in \mathbb{Z}$, then $x =$ ....

(6) $(4 \times 3 \div 3) - (7 \times 3) =$ ....

(7) If $x = |-3|$, $y = -2$, then $2xy =$ ....

(8) If $-5x = 35$, where $x \in \mathbb{Z}$, then $x =$ ....

3 Answer the following :

(1) The circumference of a circle is 88 cm. Calculate its area. (Consider $\pi = \frac{22}{7}$)

....

(2) Find the solution set of the inequality : $2x + 1 \leq 7$ where $x \in \mathbb{Z}^+$

....

(3) In the Cartesian coordinates plane , locate each of the following points A (1 , 1) , B (3 , 1) and C (3 , 3) , then find the image of Δ ABC by translation $(x - 2 , y + 2)$

....

(4) The following table shows percentage of egg production in three fams , a merchant collected these eggs to distribute them on the grocery stores :

The farm	First	Second	Third
The percentage of the production	25 %	35 %	40 %

Represent these data by using the circular sectors.

....

9 El-Dakahlia Governorate

Maths Supervision



Answer the following questions :

1 Choose the correct answer :

(1) $|-98|$ .... $\mathbb{Z}^-$ ($\notin$ or $\in$ or $\subset$ or $\not\subset$)

(2) The image of the point (............ , ...) by translation $(x-3 , y+4)$ is $(-5 , -3)$ ((−8 , 1) or (−2 , −7) or (−2 , 7) or (2 , 7))

(3) The equation : $x^2 + x = 5$ is of .... degree. (fourth or third or second or first)

(4) The probability of the impossible event = ... (1 or $\frac{1}{2}$ or $\frac{1}{4}$ or 0)

(5) $(-6)^2$ .... -12 (> or = or < or ≤)

(6) A circle , its diameter length is 20 cm. , then its area = ... cm^2 ($\pi = 3.14$) (31.4 or 314 or 23.14 or 43.14)

(7) $2-(-3)^0$ = ... (5 or 3 or 1 or 2)

(8) The sum of edge lengths of a cube is 24 cm. , then T.S.A. = ... cm^2 (16 or 36 or 4 or 24)

(9) If X (3 , 8) , Y (3 , 4) , then the length of $\overline{XY}$ = ... length units. (4 or 6 or 12 or 5)

(10) If (S) is a sample of a random experiment , then P (S) = ... (0 or 1 or $\frac{1}{4}$ or $\frac{1}{2}$)

(11) If 3 y = 9 , then y + 5 = ... (11 or 32 or 8 or 14)

(12) The additive inverse of $(-3)^2$ is .... (9 or 3 or −3 or −9)

2 Complete :

(1) Two things must be known for the translation to happen .... , ...

(2) The probability of the sure event = ...

(3) $(-1)^{100} + (-1)^{103}$ = ...

(4) If a cuboid shaped box with a square base its length is 9 cm. and its height is 10 cm. , then the L.S.A. = ... cm^2

(5) $(-6) \times (-2)$ = ...

(6) The measure of the angle for the sector of third of a circle = ...°

(7) A cube , its volume is 1000 cm^3 , then its lateral area = ... cm^2

(8) $2 \times 3^2 \div 3^2 - 4 \times 3 =$ ....

3 Answer the following :

(1) Find the solution set of : $3x - 7 \le 5$, where $x \in \mathbb{Z}$

....

....

....

(2) Find the value of : $\frac{(-3)^7 \times (-3)^4}{(-3)^5}$

....

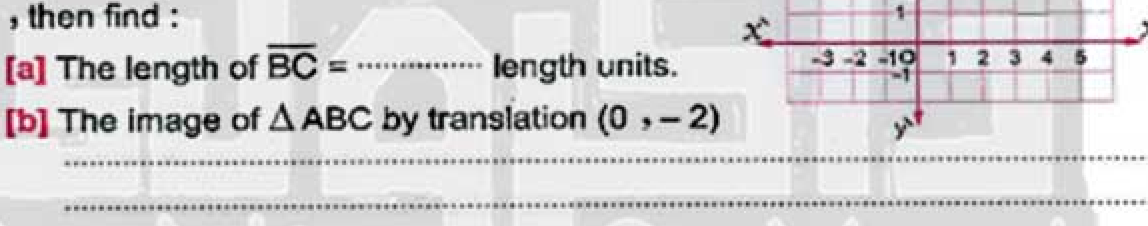
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(3) In the coordinate plane :

Locate each of the following points

A (2 , 3) , B (4 , 3) and C (4 , 5)

, then find :



[a] The length of $\overline{BC}$ = ... length units.

[b] The image of $\triangle$ ABC by translation (0 , – 2)

....

....

....

(4) Find the lateral area and total area of a cuboid without lid , its length is 16 cm. , its width is 9 cm. and its height is 5 cm.

....

....

....

(5) The following table shows the percentages of production of a factory for three kinds of electric water heaters :

The kind	1^{st}	2^{nd}	3^{rd}
Percentage	25 %	35 %	40 %

Represent data by the circular sectors.

....

....

....

10 Ismailia Governorate

Directorate of Education
Directing Mathematics



Answer the following questions :

1 Choose the correct answer :

(1) $\mathbb{Z}^+ \cap \mathbb{Z}^- =$ .... ($\varnothing$ or 1 or -1 or 2)

(2) If $2x = 0$, then $x =$ .... (2 or 3 or 5 or 0)

(3) The greatest negative integer is .... (2 or 1 or 0 or -1)

(4) If $x + 6 = 5$, then the solution set in $\mathbb{N}$ is ....
($\{-1\}$ or $\{1\}$ or $\varnothing$ or $\{0\}$)

(5) If $x + 2 = |-5|$, then $x =$ .... (3 or -3 or 7 or 4)

(6) The solution set of the inequality : $x > 0$ in $\mathbb{Z}$ is ....
($\mathbb{Z}$ or $\mathbb{Z}^+$ or $\mathbb{Z}^-$ or $\mathbb{N}$)

(7) The image of the point (3 , 0) by translation of magnitude 3 units in the negative direction of x-axis is ....
((3 , 3) or (0 , 0) or (3 , -3) or (0 , -3))

(8) If $x > y$, then $x + z$ .... $y + z$ ($>$ or $<$ or $=$ or $\leq$)

(9) The probability of the impossible event = ... ($\varnothing$ or 1 or 0 or -1)

(10) The surface area of the circle = $\pi \times$ .... (r or 2 r or r^2 or r^3)

(11) If a fair die is rolled once , then the probability of getting an even number = ... (0 or $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{1}{4}$)

(12) If the total area of the cube = 54 cm^2 , then the area of one face = ... cm^2
(4 or 5 or 8 or 9)

2 Complete :

(1) $\mathbb{Z}^+ - \mathbb{Z}^- = \mathbb{N} -$ ....

(2) The sum of edge lengths of a cube = 120 cm. ,
then the lateral area = ... cm^2

(3) $y - 4 < 2$ is an inequality of .... degree.

(4) The area of the circle whose diameter length is 14 cm. = ... cm^2

(5) On the number line :
The length of $\overline{AB}$
= .... length units.

A at -3, B at 4 on a number line from -4 to 5.

(6) If $|x| = 3$, then $x =$ ....

(7) If one of the families spends its salary as the following 40 % for food , 20 % for house rent , 30 % for expenses , then saves the remainder is .... %

(8) A cuboid of length 6 cm. , width 4 cm. and height 5 cm. , then its lateral area = ... cm^2

3 **Answer the following :**

(1) Find the value of : $\frac{(-2)^5 \times 3^5}{3^3 \times (-2)^3}$

....

....

(2) Calculate the area of the opposite figure.
(Consider $\pi = \frac{22}{7}$)



....

....

....

(3) The perimeter of the base of a cube is 28 cm.
Calculate its lateral area and total area.

....

....

....

(4) Find the solution set of the following equation , where $x \in \mathbb{Z}$: $x + 5 = 4$

....

....

(5) A box contains 25 balls , 6 balls are yellow , 7 balls are red and the remainder is black , if a ball is drawn randomly.
Find the probability that the drawn ball is :

[a] Black = ... [b] Not red = ...

11 Suez Governorate

South Educational Zone
Mathematics Inspection



Answer the following questions :

1 **Choose the correct answer :**

(1) When tossing a die once , then the probability of getting a number on the upper face more than 6 = ... (zero or $\frac{1}{6}$ or $\frac{1}{3}$ or $\varnothing$)

(2) $\{0\}$ .... $\mathbb{N}$ ($\subset$ or $\not\subset$ or $\in$ or $\notin$)

(3) The equation : $x^2 + 3 = 8$ is of .... degree.
(first or second or third or fourth)

(4) $|-5|$ 5
(< or = or > or otherwise)

(5) $(-1)^8 + (-1)^9 =$ ....
(−1 or zero or 1 or 2)

(6) The sum of the measures of the accumulative angles at a point = ...°
(90 or 180 or 270 or 360)

(7) If $2x = -6$, then $x \in$ ....
($\mathbb{N}$ or $\varnothing$ or $\mathbb{Z}^+$ or $\mathbb{Z}^-$)

(8) $\frac{1}{7^5} \times 7^5$ 1
(< or = or > or otherwise)

(9) The total area of the cube = Area of one face × ....
(2 or 4 or 6 or 8)

(10) **On the number line :**
AB = ... units

(number line from −4 to 6 with A at −2 and B at 5)

(8 or 7 or 5 or −2)

(11) $5 \times (-4) =$ ....
(−20 or 20 or 9 or −1)

(12) The image of the point (−3 , 4) by translation $(x , y - 4)$ is ....
((−3 , 0) or (−7 , 4) or (−3 , 8) or (−1 , 4))

2 Complete :

(1) $\mathbb{Z} - \mathbb{N} =$ ....

(2) The circumference of the circle = ... $\times \pi$

(3) $\frac{2^2 \times 2^5}{2^2} =$ ....

(4) If $x + 6 = 2$, $x \in \mathbb{Z}$, then $x =$ ....

(5) The lateral area of the cuboid = perimeter of the base × ....

(6) A cube of edge length 10 cm. , then its lateral area = ...

(7) .... = (length + width) × 2

(8) A box contains 5 white balls , 3 blue balls and 8 red balls all of them are symmetric. One ball is drawn from the box at random. Then the probability that the drawn ball is red = ...

3 Answer the following :

(1) Use the properties of addition in $\mathbb{Z}$ to find the result of :
(−7) + 19 + 17 (state the property used in each step)
....
....
....

(2) Find the solution set of the following inequality in $\mathbb{Z}$: $x - 2 \leq 3$

....

....

(3) A circle , its radius length is 7 cm. , calculate its surface area. $\left(\text{where } \pi = \frac{22}{7}\right)$

....

....

(4) A cuboid shaped box with a square base. Its length is 10 cm. , its height is 7 cm. Calculate the lateral area.

....

....

(5) The following table shows the percentages of the production of a factory of house electrical sets :

The kind of set	Washing machine	Heater	Oven	Mixer
The percentage	25 %	15 %	40 %	20 %

Represent these data using circular sectors.

....

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....

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12 Port Said Governorate

Educational Directorate Maths Inspector



Answer the following questions :

1 Choose the correct answer :

(1) The surface area of a circle = π × .... (r **or** r^2 **or** 2 r **or** 3.14)

(2) If $-2x = 6$, then $x \in$ .... ($\mathbb{N}$ **or** ∅ **or** $\mathbb{Z}^+$ **or** $\mathbb{Z}^-$)

(3) The number which satisfies the inequality : $x - 2 > 3$ is ....
(−1 **or** −2 **or** 6 **or** 4)

(4) $(-1)^8 + (-1)^9 =$ .... (zero **or** −1 **or** 1 **or** 2)

(5) $|5 - 11|$ .... $\mathbb{Z}$ (∉ **or** ∈ **or** ⊂ **or** ⊄)

(6) $2^5 \times 2^2 =$ .... (2^7 **or** 2^4 **or** 2^3 **or** 1)

(7) When tossing a die once the probability of getting a number on the upper face more than 6 is .... (∅ **or** zero **or** 1 **or** 2)

(8) $|-3|$ = ... (3 or -3 or $-|3|$ or $3-3$)

(9) The total area of a cube = area of one face × ....

(4 or 5 or 6 or 8)

(10) The probability of the impossible event = ... ($\varnothing$ or zero or 1 or 2)

(11) The image of the point (2 , 3) by translation ($x + 1$, $y + 2$) is ....

((3 , 4) or (3 , 5) or (4 , 3) or (5 , 3))

(12) If $x + 6 = 2$, $x \in \mathbb{Z}$, then x = ... (4 or $|-4|$ or -4 or $|4|$)

2 Complete :

(1) $3 + |-3|$ = ...

(2) The perimeter of the base of a cuboid is 10 cm. , its height is 4 cm. , then its lateral area = ...

(3) The probability of the sure event = ...

(4) The sum of the measures of the angles of the sectors about the centre of circle = ...°

(5) The circumference of the circle = ... × π

(6) A cube of total area 150 cm^2 , then the length of its edge is .... cm.

(7) $\mathbb{Z}^+ \cup \{0\}$ = ...

(8) If $3x = 9$, then x = ...

3 Answer the following :

(1) Find the result of : $(4 \times 3^2 \div 3^2 - 7 \times 3)$

....

....

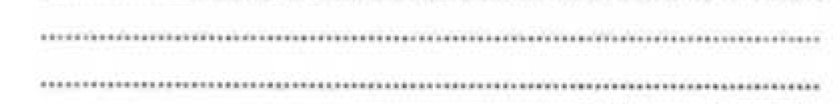
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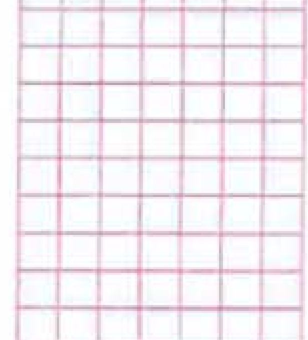
(2) In the coordinate plane locate the points

A (2 , 3) , B (4 , 3) , C (4 , 7) , then find :

[a] The length of $\overline{BC}$ = ... units.

[b] The image of Δ ABC by translation (0 , −4)





(3) Find the solution set of the inequality : $x - 2 \geq 3$ where $x \in \mathbb{Z}$
, then represent it on the number line.

....

....

....

(4) A cuboid shaped box with a square base its length side is 10 cm. and its height is 4 cm. , calculate the lateral area.

....

....

(5) The following table shows the percentage of the production of a factory of house electric sets , represent it by circular sectors :

The kind of set	Washing machine	Heater	Oven	Mixer
The percentage	30 %	15 %	40 %	15 %

....

....

....

....

13 Damietta Governorate

Damietta Educational Directorate
Official Language Schools



Answer the following questions :

1 Choose the correct answer :

(1) $\mathbb{Z} \cap \mathbb{N} =$ .... ($\mathbb{Z}$ or $\mathbb{Z}^+$ or $\{0\}$ or $\mathbb{N}$)

(2) The equation : $x^3 + 4 = 5$ is of the .... degree.
(first or second or third or fourth)

(3) A circle , its radius length is 4 cm. , then its area = ... π cm^2.
(4 or 8 or 12 or 16)

(4) The image of the point (– 3 , 5) by translation (x + 1 , y – 2) is ....
((– 4 , 3) or (– 2 , 3) or (– 2 , – 3) or (2 , 3))

(5) If a fair die is tossed once , then the probability of getting an odd number = ... (0 or 1 or $\frac{1}{3}$ or $\frac{1}{2}$)

(6) $|-4| - |4| =$ .... (zero or 1 or 8 or – 8)

(7) All the following numbers satisfy the inequality : $x > -3$ except ....
(zero or – 4 or – 1 or 2)

(8) The sum of edge lengths of a cube is 96 cm. , then its lateral area = ... cm^2 (8 or 64 or 256 or 384)

(9) A circular sector represents $\frac{1}{3}$ of a circle , then the measure of its central angle = ...° (90 or 120 or 180 or 270)

(10) If $3x = -9$, then $x \in$ .... ($\mathbb{N}$ or $\mathbb{Z}^+$ or $\varnothing$ or $\mathbb{Z}^-$)

(11) $(-1)^8 + (-1)^9 + (-1)^{zero} =$ .... (zero or -1 or 1 or 2)

(12) The solution set of the inequality : $2 \le x < 3$ where $x \in \mathbb{N}$ is ....

({zero} or {2} or {3} or {2 , 3})

2 Complete each of the following :

(13) $\frac{(-2)^7 \times (-2)^5}{2^{10}} =$ ....

(14) If $x - 3 = |-7|$, then $x =$ ....

(15) If X (−3 , 2) , Y (−3 , −4) , then the length of $\overline{XY}$ = ... units.

(16) The height of a cuboid whose lateral area is 160 cm^2 and dimensions of its base are 7 cm. and 3 cm. = ... cm.

(17) A box contains 5 white balls , 3 blue balls and 8 red balls , all of them are symmetric , one ball is drawn from the box at random , then the probability that the drawn ball is red = ...

(18) The multiplicative identity element in $\mathbb{Z}$ is ....

(19) The image of the point (−1 , 2) by translation of magnitude of 3 units in the positive direction of y-axis is ....

(20) The surface area of the circle = ...

3 Answer the following :

(21) Find the solution set of the inequality : $3x - 2 \ge 4$, where $x \in \mathbb{Z}$

....

....

....

(22) Use the properties of addition in $\mathbb{Z}$ to find :
115 + 390 + (− 115) (write the used property).

....

....

....

(23) A cube of edge length 12 cm. Find the total area.

....

....

(24) A circle , its diameter length is 14 cm. Calculate its area where $\left(\pi = \frac{22}{7}\right)$

....

....

(25) The following table shows the rate of the score of 200 students in one school of Cairo governorate :

Rate	Excellent	Good	Pass	Weak
Percentage	15 %	50 %	25 %	10 %

Represent these data by circular sectors.

....

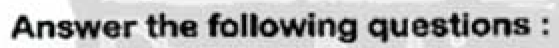
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14 Kafr El-Sheikh Governorate

Educational Directorate
General Math Supervision



Answer the following questions :

1 Choose the correct answer :

(1) If $x - 2 = 3$, then $x =$ .... (-5 or -1 or 1 or 5)

(2) The lateral area of a cuboid of length 3 cm. , width 2 cm. and height 4 cm. = ... cm^2 (20 or 24 or 40 or 52)

(3) If $a < b$, then $-3a$ .... $-3b$ ($<$ or $>$ or $=$ or $\leq$)

(4) $3 - |-3| =$ .... (0 or 1 or 3 or 6)

(5) The image of the point A (3 , 4) by translation (1 , – 1) is ....

((3 , 3) or (2 , 3) or (4 , 3) or (4 , 5))

(6) $\mathbb{Z}^+ \cap \mathbb{Z}^- =$ .... ($\varnothing$ or $\mathbb{Z}$ or π or $\{0\}$)

(7) $(-1)^{104} + (-1)^{103} =$ .... (zero or -1 or 1 or 2)

(8) A cube of edge length 6 cm. , then its total area = ... cm^2

(36 or 72 or 144 or 216)

(9) If a die is thrown once , then the probability of appearance of the number 5 = ... ($\frac{5}{6}$ or $\frac{1}{6}$ or 0.5 or 1)

(10) The area of the circle = ... $\times \pi$ (r or 2 r or r^2 or r + 2)

(11) The measure of the central angle which represents $\frac{1}{8}$ of the circle = ...
(90° or 36° or 45° or 40°)

(12) If S is a sample space of a random experiment , then P (S) = ...
(0 or 2 or 1 or 0.8)

2 Complete the following :

(13) If $x + 5 = 3$, $x \in \mathbb{Z}$, then x = ...

(14) The perimeter of the base of the cuboid is 10 cm. , its height is 4 cm.
, then its lateral area = ... cm^2.

(15) The equation : $x^2 - 3 = 6$ is of the .... degree.

(16) $3^2 + 2^3$ = ...

(17) If the perimeter of base of a cube is 20 cm. , then its total area is .... cm^2.

(18) A circle of radius length 7 cm. , then its area = ... cm^2.

(19) If X (– 3 , 2) , Y (– 3 , 4) , then the length of $\overline{XY}$ = ... length units.

(20) The probability of the impossible event is ....

3 Answer the following :

(21) Find the solution set of the inequality : $2x + 1 < 5$, where $x \in \mathbb{N}$

....

....

(22) Find the result of : $\frac{2^3 \times (-2)^4}{2^5}$

....

(23) If the sum of edge lengths of a cube = 36 cm. Find :

[a] Its lateral area. [b] Its total area.

....

....

....

....

(24) A circle of radius length 7 cm. is divided into 8 equal circular sectors.
Find the area of each circular sector. $\left(\pi \simeq \frac{22}{7}\right)$

....

....

(25) The following table shows the percentage of the number of students who participated in a school activities represent the data by a pie chart :

The activity	Music	Sport	Art
The percentage	25 %	40 %	35 %

....

....

....

15 El-Fayoum Governorate

Educational Directorate
Maths Inspector



Answer the following questions :

1 Choose the correct answer from those between brackets :

(1) $\mathbb{N} \cup \mathbb{Z}^- =$ .... ($\mathbb{Z}^+$ or $\mathbb{Z}^-$ or $\mathbb{Z}$ or $\mathbb{N}$)

(2) All the following numbers satisfy the inequality : $x > -3$ except .... (0 or -2 or -1 or -4)

(3) $(-1)^{11} + (-1)^{10} =$ .... (zero or -1 or 1 or 2)

(4) If $\frac{x-1}{2} = 3$, $x \in \mathbb{Z}$, then $x =$ .... (5 or 7 or -7 or 6)

(5) $|-7| + 3$ .... $|-7+3|$ (> or = or < or ≤)

(6) The additive inverse of $(-3)^0$ is .... (3 or -3 or 1 or -1)

(7) If $x = 4$, $y = -3$, then the negative number of the following is .... ($x + y$ or $x - y$ or xy or y^x)

(8) The image of the point $(4 , -3)$ by translation $(x - 3 , y + 3)$ is .... ($(-7 , -6)$ or $(1 , 0)$ or $(0 , 1)$ or $(7 , 6)$)

(9) The probability of appearing a head when tossing a coin once = ... (zero or 2 or 1 or $\frac{1}{2}$)

(10) If the probability of success of a student in mathematics is 75 % , then the probability of his failure = ... (25 or 0.35 or 1 or $\frac{1}{4}$)

(11) The ratio between the lateral surface area and the total surface area of a cube = ... (2 : 3 or 3 : 4 or 6 : 4 or 1 : 2)

(12) The total surface area of a cuboid = 100 cm^2 and area of one base 20 cm^2 , then its lateral surface area = ... cm^2 (40 or 60 or 80 or 140)

2 Complete each of the following :

(13) The degree of the equation : $x^3 + 3x^2 + x + 4 = 11$ is .... degree.

(14) The solution set of the inequality : $x \leq 0$ in $\mathbb{N}$ = ...

(15) The solution set of the equation : $x + 6 = 5$ in $\mathbb{N}$ = ...

(16) If the perimeter of one face of a cube is 20 cm. , then its total surface area = ... cm^2.

(17) In the coordinates plane if the point A (– 2 , 4) and the point B (5 , 4) , then length of $\overline{AB}$ = ... units.

(18) A cuboid its lateral area is 120 cm^2 and the length is 8 cm. , width is 4 cm. , then its height = ... cm.

(19) $\frac{\text{Circumference of the circle}}{2\pi}$ = ...

(20) .... ≤ the probability of any event ≤ ....

3 Answer the following :

(21) Find the result of : $\frac{(-5)^5 \times (-5)^4}{(-5)^7}$

....

(22) Find the solution set of the following equation in $\mathbb{Z}$: $3(x + 2) = 3$

....

....

....

(23) Calculate the area of a circle with radius length 10 cm. ($\pi = 3.14$)

....

(24) A box in the shape of a cuboid , its length is 10 cm. , its width is 5 cm. and its height is 8 cm. , find its lateral surface area and its total surface area.

....

....

....

(25) The following table shows the percentage of the favorite sports in a school :

Type of the sport	Football	Basketball	Handball
Percentage of students number	40 %	35 %	25 %

Represent these data by circular sectors.

....

....

....



16 El-Menia Governorate



Answer the following questions :

1 Choose the correct answer :

(1) If $x - 2 = 3$, then $x =$ .... (-5 or -1 or 1 or 5)

(2) A cube of edge length 6 cm. , then its total area = ... cm^2.

(36 or 72 or 144 or 216)

(3) When tossing a die once, then probability of getting a number divisible by 5 equals .... (0 or $\frac{1}{6}$ or $\frac{5}{6}$ or 1)

(4) The equation : $x^2 + 3 = 4$ is of the .... degree.

(first or second or third or fourth)

(5) The smallest natural number is .... (0 or 1 or 2 or 3)

(6) The number which satisfies the inequality : $x > -2$ is ....

(-1 or -4 or -3 or -2)

(7) A circle, its radius length is 4 cm. , then its area = ... $\pi\ cm^2$.

(8 or 16 or 64 or 2 r)

(8) The additive identity in $\mathbb{N}$ = ... (zero or 1 or -1 or 2)

(9) The total area of a cube is 324 cm^2 , then the area of face = ...

(54 cm^2 or 81 cm^2 or 54 cm. or 81 cm.)

(10) $(-1)^{104} + (-1)^{103} =$ .... (zero or -1 or 1 or 2)

(11) The probability of occurrence of the impossible event = ...

($\varnothing$ or zero or 1 or $\frac{1}{2}$)

(12) If $-3x < 30$, then x .... (-10) ($>$ or $<$ or $=$ or $\leq$)

2 Complete each of the following :

(1) Measure of angle of the circular sector in which its area represents $\frac{1}{8}$ from the area of the circle = ...

(2) If X (– 3 , 2) , Y (– 3 , 4) , then length of $\overline{XY}$ = ... length units.

(3) $\mathbb{Z}^+ - \mathbb{Z}^- =$ ....

(4) The lateral area of a cuboid of length 3 cm. , width 2 cm. and height 4 cm. = ... cm^2.

(5) The sum of the measures of all accumulative angles at the center of a circle equals ....

(6) The image of the point (2 , – 1) by translation (x – 1 , y + 3) is the point (............ , ...)

(7) If $x + 3 = |-7|$, then x = ...

(8) If $x = |-12|$, $y = -3$, then $x + y$ = ...

3 Answer the following :

(1) Find the solution set of the inequality : $3x - 5 \le 7$ where $x \in \mathbb{Z}^+$, then represent the solution set on the number line.

....

....

....

(2) A cuboid , its length is 6 cm. , its width is 4 cm. and its height is 8 cm. Find :

[a] Its lateral area. [b] Its total area.

....

....

....

(3) Find the result of : $\frac{2^3 \times 2^5}{2^4}$

....

....

(4) A box contains 8 white balls, 7 red balls, all balls are identical, if one ball is drawn randomly, find the probability that this ball is :

[a] Red = ... [b] White = ...

[c] Blue = ... [d] Red or white = ...

(5) The following table shows the percentage of eggs production in three farms during one month :

The farm	First	Second	Third
The percentage of production	25 %	50 %	25 %

Represent these data by circular sectors.

....

....

....

17 Souhag Governorate

Maths Supervision



Answer the following questions :

1 Choose the correct answer :

(1) .... is the smallest positive integer. $(-1$ or 0 or 1 or $-10)$

(2) $\mathbb{Z}^+ \cap \mathbb{Z}^- =$ .... $(\{0\}$ or $\varnothing$ or $\mathbb{Z}$ or zero$)$

(3) The probability of getting on the upper face of a die a number which is more than 6 when tossing it once is .... $(\varnothing$ or zero or $\frac{1}{6}$ or $\frac{1}{3})$

(4) The surface area of the circle whose diameter length is 20 cm.
= .... cm^2 $(\pi = 3.14)$ $(314$ or 0.314 or 3.14 or $62.8)$

(5) $(-1)^8 + (-1)^9 =$ .... (zero or -1 or 1 or 2)

(6) The probability of the impossible event = ... $(0$ or 1 or 2 or $3)$

(7) A circle , its circumference is 88 cm. , then its radius length = ... cm. $(\pi = \frac{22}{7})$
$(28$ or 24 or 44 or $14)$

(8) The equation : $4x^3 - x = 29$ is of .... degree.
(fourth or third or second or first)

(9) The smallest non-negative integer is .... $(1$ or 0 or -1 or $2)$

(10) A circle , its radius length is 7 cm. , then its area = ... cm^2 $\left(\pi = \frac{22}{7}\right)$
$(145$ or 154 or 22 or $7)$

(11) The image of the point $(-4 , 3)$ by translation $(-1 , -4)$ is ....
$((-5 , -7)$ or $(-5 , -1)$ or $(-7 , 3)$ or $(-3 , -1))$

(12) $|-9| + 3$ .... $\mathbb{Z}$ $(\in$ or $\notin$ or $\subset$ or $\not\subset)$

2 Complete each of the following :

(1) The lateral surface area of a cuboid of length 3 cm. , width 2 cm. and height 4 cm. = ... cm^2

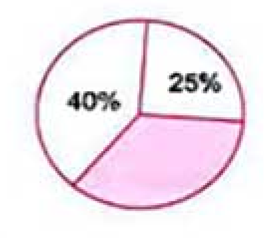
(2) $\frac{(-2)^7 \times (-2)^5}{2^{10}} =$ ....

(3) $\mathbb{Z} =$ .... $\cup$ .... $\cup$ ....

(4) If the perimeter of base of a cube is 20 cm. , then its lateral area = ... cm^2

(5) If A $(2 , 4)$, B $(2 , -1)$, then the length of $\overline{AB}$ is .... units.

(6) **In the opposite figure :**
The percentage of the shaded circular sector = ... %



(7) The sum of the measures of the accumulative angles at the centre of the circle = ...

(8) The image of the point (2 , 4) by translation ($x - 1$, y + 1) is ....

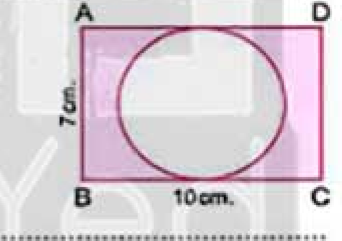
3 Answer the following :

(1) Find the solution set of the equation : $2x - 3 = -9$, where $x \in \mathbb{Z}$

(2) A cuboid box with a square base of side length 6 cm. and its height is 10 cm. Calculate its lateral surface area and its total surface area.

(3) Find the solution set of the inequality : $3x - 2 \geq 4$, where $x \in \mathbb{Z}$

(4) **In the opposite figure :**
ABCD is a rectangle where its length = 10 cm. and its width = 7 cm. , calculate the area of the shaded part. ($\pi = \frac{22}{7}$)



(5) The following table shows the rate of the score of 200 students in one school of Cairo governorate :

Rate	Excellent	Good	Pass	Weak
Percentage	15 %	50 %	25 %	10 %

Represent these data by a pie chart.

18 Qena Governorate

Qena Educational Directorate
Central Mathematics Supervision



Answer the following questions :

1 Complete :

(1) If the lateral area of a cube is 36 cm^2, then its total area = ... cm^2

(2) $(-1)^8 + (-1)^9 =$ ....

(3) The distance between the location of a number and the location of zero on the number line is called ....

(4) The additive inverse of zero is ....

(5) The image of the point (3 , 5) by translation $(x + 2 , y - 1)$ is ....

(6) The probability of the impossible event = ...

(7) If A (– 2 , 1) , B (3 , 1) , then AB = ... units.

(8) A cube of edge length 6 cm. , then its lateral area = ... cm^2

2 Choose the correct answer :

(1) If S is a sample space of a random experiment, then P (S) = ...
(zero *or* 2 *or* 1 *or* 0.8)

(2) $-|-54| =$ .... (– 54 *or* 54 *or* 9 *or* 1)

(3) The greatest negative integer is .... (0 *or* 1 *or* – 1 *or* – 2)

(4) $-4 >$ .... (4 *or* – 3 *or* – 5 *or* 0)

(5) Type of central angle of a circle is straight angle , then it represents .... from surface area of the circle.
(quarter *or* half *or* third *or* whole one)

(6) 4^2 .... 8 (> *or* < *or* = *or* otherwise)

(7) When tossing a die once, then probability of getting a number 5 = ...
(zero *or* $\frac{1}{6}$ *or* $\frac{5}{6}$ *or* 1)

(8) If the perimeter of base of a cube is 24 cm. , then its total area = ... cm^2
(144 *or* 36 *or* 54 *or* 216)

(9) The equation $x^3 - x = 29$ is of the .... degree.
(first *or* second *or* third *or* fourth)

(10) If $2x = -6$, then $x \in$ .... ($\mathbb{N}$ *or* $\varnothing$ *or* $\mathbb{Z}^+$ *or* $\mathbb{Z}^-$)

(11) $[5 + (-3)] \times (-11) =$ .... (22 *or* – 22 *or* 88 *or* – 88)

(12) $\mathbb{Z}^+$ .... $\mathbb{N}$ ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

3 **Answer the following :**

(1) A circle , its circumference is 44 cm. Calculate its surface area. ($\pi = \frac{22}{7}$ or 3.14)

....

....

(2) A cuboid , its length is 6 cm. , its width is 4 cm. and its height is 8 cm. Find its lateral area and its total area.

....

....

....

(3) Find the result of : $\frac{(-3)^3 \times (-3)^4}{(-3)^5}$

....

(4) Find the solution set of the inequality : $3x - 2 \geq 4$ where $x \in \mathbb{Z}$, then represent it on the number line.

....

....

....

(5) The following table shows the percentage of the production of a factory of house electrical sets :

Marks	Washing machine	Heater	Oven	Mixer
Percentage	30 %	15 %	40 %	15 %

Represent these data by circular sectors.

....

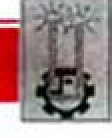
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19 Aswan Governorate

Aswan Educational Directorate
Aswan Official Language School



Answer the following questions :

1 **Choose the correct answer from those given :**

(1) The greatest negative integer is .... (0 *or* 1 *or* –1 *or* 2)

(2) The total area of cube = ... × area of one face (6 *or* 2 *or* 4 *or* 3)

(3) $|-6|+|6|=$ .... (12 *or* −12 *or* 1 *or* 0)

(4) The image of the point (............ , ...) by translation $(x-3 , y+4)$ is $(-5 , -3)$ ((−8 , 15) *or* (−2 , −7) *or* (−8 , 7) *or* (−2 , 7))

(5) $(-8)\times 1=$ .... (−7 *or* −9 *or* 8 *or* −8)

(6) The probability of the impossible event = ... (0 *or* 1 *or* −1 *or* $\frac{1}{2}$)

(7) The solution set of the equation : $x+2=7$, where $x\in\mathbb{Z}$ is .... (−5 *or* 9 *or* 5 *or* −9)

(8) $(-36)\div(-4)=$ .... (−9 *or* 9 *or* −6 *or* 4)

(9) $7-|-3|=$ .... (21 *or* −10 *or* 10 *or* 4)

(10) The previous integer of (−9) is .... (−10 *or* 8 *or* −8 *or* 10)

(11) If $\varnothing$ is the empty set then $P(\varnothing)=$ .... (zero *or* $\frac{1}{2}$ *or* 1 *or* 2)

(12) The image of the point (1 , −3) by translation (............ , ...) is (1 , 0) ((1 , 0) *or* (0 , 0) *or* (3 , 0) *or* (0 , 3))

2 Complete the following :

(1) If $x+6=2$, $x\in\mathbb{Z}$, then $x=$ ....

(2) $(-3)^0=$ ....

(3) The lateral area of a cube its edge length 5 cm. equals ....

(4) The image of the point (3 , 5) by translation $(x+2 , y-1)$ is ....

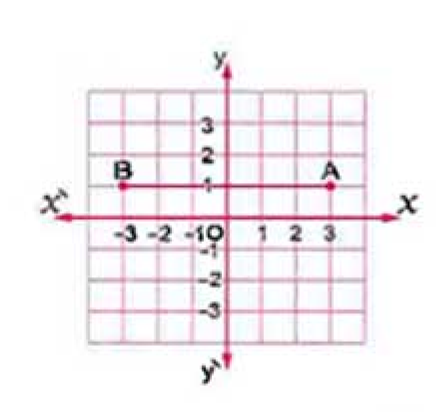
(5) The total area of the cuboid = ... + the sum of the areas of the two bases

(6) When tossing a die once, the probability of getting a number divisible by 3 equals ....

(7) $\mathbb{Z}-\mathbb{N}=$ ....

(8) In the opposite coordinate plane :

AB = ... units.



3 **Answer the following :**

(1) Use the properties of addition operation in $\mathbb{Z}$ to find the result of the following : 37 + 25 + 63 + 75

....

....

(2) A circle , its circumference 88 cm. Calculate its surface area. ($\pi = \frac{22}{7}$)

....

....

(3) Find the solution set of the inequality : $x - 2 \geq 3$, $x \in \mathbb{Z}$, then represent it on the number line.

....

....

....

(4) A cuboid shaped box with a square base its side length is 9 cm. and the height is 20 cm. Calculate the lateral area and total area.

....

....

....

(5) The following table shows the percentages of the production of house electrical sets :

The kind of set	Washing machine	Heater	Oven	Mixer
The percentage	30 %	15 %	40 %	15 %

Represent these data by circular sectors.

....

....

....

....

20 South Sinai Governorate

El-Tur Educational Zone
Maths Inspection



Answer the following questions :

1 **Choose the correct answer :**

(1) 3 .... – 6 (> or < or = or ≤)

(2) If $2x = -6$, then $x \in$ .... ($\mathbb{N}$ or $\mathbb{Z}^+$ or $\mathbb{Z}^-$ or $\{-4\}$)

(3) The image of the point (3 , 5) by translation ($x + 2$, $y - 1$) is ....
((5 , 6) or (5 , 4) or (1 , 4) or (1 , 6))

(4) When tossing a die once, then the probability of getting a number 5 = ... (zero or $\frac{1}{6}$ or $\frac{5}{6}$ or 1)

(5) $|-65|$ .... $\mathbb{Z}^-$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(6) The number which satisfies the inequality : $x > -2$ is ....
(-1 or -2 or -3 or -4)

(7) The circumference of the circle = ... $\times \pi$
(r or 2r or r^2 or r + 2)

(8) $\mathbb{Z}^+ \cap \mathbb{Z}^-$ = ... ($\mathbb{Z}$ or $\mathbb{N}$ or $\varnothing$ or $\{0\}$)

(9) If x is less than -5, then the symbolic expression is ....
($x > -5$ or $x < -5$ or $x \geq 5$ or $x \leq -5$)

(10) The number of faces of the cube = ... faces.
(6 or 8 or 12 or 4)

(11) The sum of the measures of the accumulative angles at the centre of the circle = ... (180° or 360° or 270° or 90°)

(12) If $x - 2 = 1$, then x = ... (1 or -1 or 3 or 2)

2 Complete :

(1) A cube of edge length 6 cm., then its total area = ... cm^2

(2) If the base area of a cube = 49 cm^2, then its lateral area = ...

(3) If $x + 5 > 2$, then $x >$ ....

(4) The probability of the impossible event = ...

(5) The image of the point A (1 , 4) by translation ($x - 2$, $y + 1$) is the point $\acute{A}$ (.......... , ...)

(6) The equation : $3x^2 - 6 = 14$ is of the .... degree.

(7) If the perimeter of the base of a cuboid is 10 cm. and its height is 4 cm., then its lateral area = ... cm^2

(8) If X (-3 , 2) , Y (-3 , -4), then the length of $\overline{XY}$ = ... length units.

3 Answer the following :

(1) Find the result of : $\frac{2^6 \times 2^5}{2^3 \times 2}$

....

(2) Find the solution set of the equation : $2x + 9 = 3$, where $x \in \mathbb{Z}$

....

....

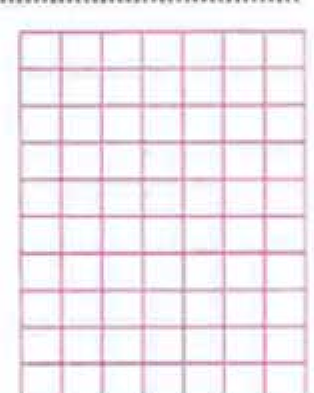
(3) A circle , its diameter length is 14 cm. , calculate its surface area.

(where $\pi \simeq \frac{22}{7}$)

The surface area = ...

(4) In a Cartesian coordinate plane , locate the points A (2 , 3) , B (4 , 3) , C (4 , 7) and join them, then find the length of $\overline{BC}$

....



(5) The following table shows the percentage of production in three farms :

The farm	The first	The second	The third
The percentage of the production	25 %	35 %	40 %

Represent these data by using the circular sectors.

....

....

....

Answers of model examinations of the school book

Model 1

1 (1) zero (2) $(-3, 0)$ (3) $\subset$ (4) zero

2 (1) $\in$ (2) -4 (3) 6 (4) $\frac{1}{2}$

3 [a] $4 \times 9 + 9 - 21 = 36 + 9 - 21 = 4 - 21 = -17$

[b] $\because X - 2 \geq 3 \quad \therefore X \geq 3 + 2 \quad \therefore X \geq 5$

$\therefore$ The S.S. $= \{5, 6, 7, ...\}$

4 [a] The lateral area $= 10 \times 4 \times 7 = 280$ cm^2.

[b] $\because 88 = 2 \pi r \quad \therefore r = \frac{88}{2 \times \frac{22}{7}} = 14$ cm.

$\therefore$ The area $= \frac{22}{7} \times (14)^2 = 616$ cm^2.

5 [a] $\because 3X + 9 = 3 \quad \therefore 3X = 3 - 9$

$\therefore 3X = -6 \quad \therefore X = \frac{-6}{3} \quad \therefore X = -2$

$\therefore$ The S.S. $= \{-2\}$

[b] The measure of the central angle of washing machine $= \frac{30}{100} \times 360° = 108°$

The measure of the central angle of heater $= \frac{15}{100} \times 360° = 54°$

The measure of the central angle of oven $= \frac{40}{100} \times 360° = 144°$

The measure of the central angle of mixer $= \frac{15}{100} \times 360° = 54°$

Model 2

1 (1) $\mathbb{Z}^-$ (2) $2r$ (3) $\frac{1}{6}$ (4) -1

2 (1) 64 (2) $\subset$ (3) 5 (4) $\frac{1}{3}$

3 [a] $-30 - 6 + 3 = -30 - 2 = -32$

[b] $\because X - 2 \geq 3 \quad \therefore X \geq 3 + 2 \quad \therefore X \geq 5$

$\therefore$ The S.S. $= \{5, 6, 7, ...\}$

-1 0 1 2 3 4 5 6 7

4 [a] $\because 2X + 9 = 5 \quad \therefore 2X = 5 - 9$

$\therefore 2X = -4 \quad \therefore X = \frac{-4}{2} \quad \therefore X = -2$

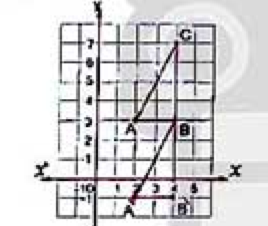
$\therefore$ The S.S. $= \{-2\}$

[b] The area of rectangle $= 8 \times 7 = 56$ cm^2.

The area of circle $= \frac{22}{7} \times (3.5)^2 = 38.5$ cm^2.

The area of the shaded part $= 56 - 38.5 = 17.5$ cm^2.

5 [a] (1) BC = 4 length units



(2) A $(2, 3) \longrightarrow$ Á $(2, -1)$

B $(4, 3) \longrightarrow$ B́ $(4, -1)$

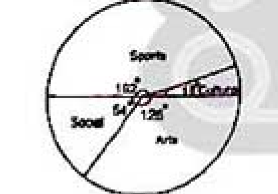
C $(4, 7) \longrightarrow$ B $(4, 3)$

[b] The measure of the central angle of cultural $= \frac{5}{100} \times 360° = 18°$

The measure of the central angle of sports $= \frac{45}{100} \times 360° = 162°$

The measure of the central angle of social $= \frac{15}{100} \times 360° = 54°$

The measure of the central angle of arts $= \frac{35}{100} \times 360° = 126°$



Model examination for the special needs students

1 (1) 3 (2) 0 (3) 1 (4) 40

2 (1) 2^7 (2) r^2 (3) π (4) $\frac{1}{2}$

3 (1) (✓) (2) (✗) (3) (✗) (4) (✓)

4 (1) 360° (2) $\in$ (3) $\{0, 1, 2\}$ (4) $(4, 4)$

5 [a] The total area $= 6 \times 4^2 = 96$ cm^2.

The lateral area $= 4 \times 4^2 = 64$ cm^2.

[b] $\frac{2^{3+4}}{2^5} = 2^2 = 4$

Answers of model examinations

Model 1

1 (1) $\frac{1}{6}$ (2) $\varnothing$ (3) $\subset$ (4) -3
(5) -2 (6) $(10)^2$ (7) sure

2 (1) $\{0\}$ (2) 213 (3) 196
(4) $(2 , 2)$ (5) -4 (6) -17
(7) -12 (8) $\frac{5}{3} , 2$

3 (1) 1 (2) $\varnothing$ (3) πr^2 (4) 0
(5) -25 (6) 3 (7) 120°

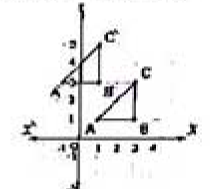
4 (1) $\because 2\pi r = 88$ $\therefore 2 \times \frac{22}{7} \times r = 88$

$\therefore r = \frac{88}{\frac{22}{7} \times 2} = 14$ cm.

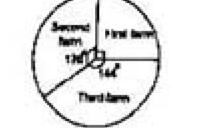
$\therefore$ The area $= \frac{22}{7} \times (14)^2 = 616$ cm²

(2) $\because 2x + 1 \le 7$ $\therefore 2x \le 7 - 1$
$\therefore 2x \le 6$ $\therefore x \le \frac{6}{2}$ $\therefore x \le 3$
$\therefore$ The S.S. $= \{3 , 2 , 1 , 0 , -1 , ...\}$

(3) A (1 , 1) ⟶ Á (−1 , 3)
B (3 , 1) ⟶ B́ (1 , 3)
C (3 , 3) ⟶ Ć (1 , 5)



(4) The measure of the central angle of first farm $= \frac{25}{100} \times 360° = 90°$
The measure of the central angle of second farm $= \frac{35}{100} \times 360° = 126°$
The measure of the central angle of third farm $= \frac{40}{100} \times 360° = 144°$



Model 2

1 (1) -5 (2) $\mathbb{Z}^-$ (3) 54 (4) $\in$
(5) 12 (6) 1 (7) 1

2 (1) $\frac{1}{6}$ (2) 13 , 16 (3) 6
(4) 4 (5) 45° (6) 1
(7) (1 , 5) (8) third

3 (1) zero (2) $\subset$ (3) 1 (4) =
(5) -3 (6) 10^2 (7) $\subset$

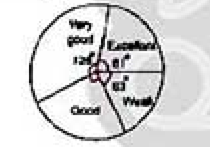
4 (1) $\because 2x - 3 = -9$ $\therefore 2x = -9 + 3$
$\therefore 2x = -6$ $\therefore x = \frac{-6}{2}$ $\therefore x = -3$
$\therefore$ The S.S. $= \{-3\}$

(2) The perimeter of the base $= 6 \times 4$
$= 24$ cm.
The lateral area $= 24 \times 10 = 240$ cm²
The total area $= 240 + 2 \times 6 \times 6$
$= 312$ cm²

(3) $32 \times (117 - 17) = 32 \times 100 = 3200$

(4) The sum of pupils $= 9 + 14 + 10 + 7$
$= 40$ pupils

The measure of the central angle of excellent $= \frac{9}{40} \times 360° = 81°$
The measure of the central angle of very good $= \frac{14}{40} \times 360° = 126°$
The measure of the central angle of good $= \frac{10}{40} \times 360° = 90°$
The measure of the central angle of weak $= \frac{7}{40} \times 360° = 63°$



Model 3

1 (1) (7 , 0) (2) 90° (3) 5^0 (4) 6
(5) 45 (6) 1 (7) $\not\in$

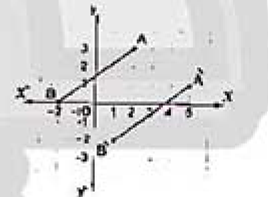
2 (1) 6 (2) 256 (3) -17 (4) 100
(5) 35 (6) 0 (7) 9 , 5 (8) 7

3 (1) 6 (2) 1 (3) 3^3 (4) $\varnothing$
(5) 3 (6) $\subset$ (7) first

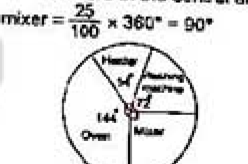
4 (1) The perimeter of the base
$= (16 + 7) \times 2 = 46$ cm.
The lateral area $= 46 \times 19 = 874$ cm²
The total area $= 874 + 16 \times 7$
$= 986$ cm²

(2) S = {33 , 35 , 53 , 55}
[a] P (A) $= \frac{2}{4} = \frac{1}{2}$
[b] P (B) $= \frac{4}{4} = 1$
[c] P (C) $= \frac{0}{4} = 0$

(3) A (2 , 3) ⟶ Á (5 , 1)
B (−2 , 0) ⟶ B́ (1 , −2)



(4) The measure of the central angle of washing machine $= \frac{20}{100} \times 360° = 72°$
The measure of the central angle of heater $= \frac{15}{100} \times 360° = 54°$
The measure of the central angle of oven $= \frac{40}{100} \times 360° = 144°$
The measure of the central angle of mixer $= \frac{25}{100} \times 360° = 90°$



Model 4

1 (1) = (2) 2 (3) -2 (4) $2\pi r$
(5) 1 (6) $\frac{1}{2}$ (7) 78.5

2 (1) Sample space (2) 1
(3) $\frac{1}{48} , \frac{1}{96}$ (4) 216 (5) $\{2\}$
(6) -2 (7) -8 (8) $\{0 , 1 , 2 , 3 , 4\}$

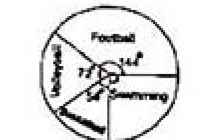
3 (1) -3 (2) $(6 , -3)$ (3) 1
(4) zero (5) 1 (6) 4 (7) $\subset$

4 (1) The area $= \frac{1}{2} \times \frac{22}{7} \times 7^2 = 77$ cm²

(2) $\because 2 - x > 3$ $\therefore -x > 3 - 2$
$\therefore -x > 1$ $\therefore x < -1$
$\therefore$ The S.S. $= \{-2 , -3 , -4 , ...\}$

(3) $43 \times (44 + 56) = 43 \times 100 = 4300$

(4) • 25
• The measure of the central angle of football $= \frac{40}{100} \times 360° = 144$
The measure of the central angle of volleyball $= \frac{20}{100} \times 360° = 72°$
The measure of the central angle of basketball $= \frac{15}{100} \times 360° = 54°$
The measure of the central angle of swimming $= \frac{25}{100} \times 360° = 90°$



Model 5

1 (1) -2 (2) 4 (3) 5 (4) zero
(5) -15 (6) 9^2 (7) 21

2 (1) 270 (2) $\frac{1}{3}$ (3) $\{0 , 1 , 2 , 3\}$
(4) zero (5) 5 (6) 9
(7) -4 (8) -1




3 (1) $(-3 , 0)$ (2) 16 (3) 6
(4) > (5) $\mathbb{N}$ (6) $\notin$ (7) third

4 (1) $\because 2X - 8 = -26$ $\therefore 2X = -26 + 8$
$\therefore 2X = -18$ $\therefore X = \frac{-18}{2}$
$\therefore X = -9 \notin \mathbb{N}$ $\therefore$ The S.S. $= \varnothing$

(2) $\frac{(2)^4 \times 2^6}{(2)^5 \times -(2)} = \frac{2^{10}}{-(2^6)} = -(2^4) = -16$

(3) The sum of all balls $= 4 + 6 + 5$
$= 15$ balls.

[a] The probability that the ball is white $= \frac{4}{15}$

[b] The probability that the ball is not red $= \frac{4 + 5}{15} = \frac{9}{15} = \frac{3}{5}$

(4) The measure of the central angle of sports $= \frac{10}{100} \times 360° = 36°$

The measure of the central angle of reading $= \frac{15}{100} \times 360° = 54°$

The measure of the central angle of music $= \frac{35}{100} \times 360° = 126°$

The measure of the central angle of computer $= \frac{40}{100} \times 360° = 144°$

Answers of Schools' Examinations

1 Cairo

1 (1) 2 (2) $\mathbb{Z}^-$ (3) 8
(4) $(-5 , -1)$ (5) -3 (6) 0

2 (1) $\in$ (2) 324 (3) 1
(4) 90° (5) 0 (6) 3^3

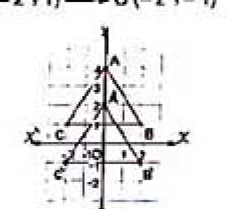
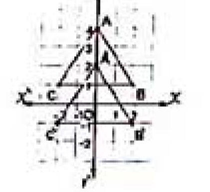
3 (1) $\mathbb{Z}^-$ (2) 4 (3) 10 cm.
(4) $\{-1 , 0\}$ (5) 100 cm^2 (6) $\frac{1}{6}$
(7) 154 (8) -18

4 [a] $\frac{5^{15}}{5^{13}} = 5^2 = 25$

[b] $\because 3X - 2 < 7$ $\therefore 3X < 7 + 2$
$\therefore 3X < 9$ $\therefore X < \frac{9}{3}$
$\therefore X < 3$
$\therefore$ The S.S. $= \{0 , 1 , 2\}$

[c] The area of the circle $= 3.14 \times (10)^2$
$= 314 \ cm^2$
The area of one sector $= 314 \div 8$
$= 39.25 \ cm^2$

5 [a] A $(0 , 4) \longrightarrow \hat{A} (0 , 2)$
B $(2 , 1) \longrightarrow \hat{B} (2 , -1)$
C $(-2 , 1) \longrightarrow \hat{C} (-2 , -1)$

[b] The measure of the central angle of washing machine $= \frac{30}{100} \times 360° = 108°$
The measure of the central angle of heater $= \frac{15}{100} \times 360° = 54°$
The measure of the central angle of oven $= \frac{40}{100} \times 360° = 144°$

The measure of the central angle of mixture $= \frac{15}{100} \times 360° = 54°$



2 Cairo

1 (1) $\mathbb{N}$ (2) 5^{th} (3) 0
(4) $4 \pi^3$ (5) -8 (6) 15

2 (7) $(4 , 0)$ (8) 84 cm^2 (9) <
(10) { } (11) 27 (12) $\frac{9}{14}$

3 (1) 3 : 2 (2) 6 (3) $\frac{1}{3}$
(4) 75.36 cm. (5) 49
(6) $\{-2 , -1 , 0 , 1 , ...\}$ (7) 216
(8) 40°

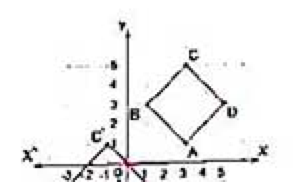
4 (1) $\because 2X - 3 = -9$ $\therefore 2X = -9 + 3$
$\therefore 2X = -6$ $\therefore X = \frac{-6}{2}$
$\therefore X = -3$
When $X \in \mathbb{Z}$: The S.S. $= \{-3\}$
When $X \in \mathbb{N}$: The S.S. $= \varnothing$

(2) $25 (9 + 1 - 9) = 25 \times 1 = 25$

(3) The area of the circle $= \frac{22}{7} \times (7)^2$
$= 154 \ cm^2$
The area of the triangle $= \frac{1}{2} \times 7 \times 14$
$= 49 \ cm^2$
The area of the shaded part $= 154 - 49$
$= 105 \ cm^2$

(4) [a] 20 % [b] 108°

(5) A $(3 , 1) \longrightarrow \hat{A} (-1 , -3)$
B $(1 , 3) \longrightarrow \hat{B} (-3 , -1)$
C $(3 , 5) \longrightarrow \hat{C} (-1 , 1)$
D $(5 , 3) \longrightarrow \hat{D} (1 , -1)$



The area of the image $= \frac{1}{2} \times 4 \times 4$

$= 8$ square units.

3 Giza

1

(1) 0	(2) 5^3	(3) 12
(4) (4 , 1)	(5) 0	(6) ∅
(7) 7	(8) ∈	(9) 12
(10) $\mathbb{Z}^-$	(11) $\frac{1}{5}$	(12) 2

2

(1) – 17	(2) 3	(3) 360°
(4) 2^{nd}	(5) $\frac{2}{5}$	(6) (2 , 2)
(7) 360 cm²	(8) 45.5 cm²	

3 (1) $\frac{-(4)^{11} \times 4^3}{4^{12}} = \frac{-(4)^{14}}{4^{12}} = -(4^2) = -16$

(2) $\because 2X + 9 < 1$ $\therefore 2X < 1 - 9$

$\therefore 2X < -8$ $\therefore X < \frac{-8}{2}$

$\therefore X < -4$

$\therefore$ The S.S. = {– 5 , – 6 , – 7 , ...}

–7 –6 –5 –4 –3 –2 –1 0 1

(3) The total area = 1.5 × 1.5 × 6 = 13.5 m²

The cost = 13.5 × 15 = L.E. 202.5

(4) [a] BC = 2 units.

[b] A (3 , – 2) ⟶ $\acute{A}$ (5 , 1)

B (1 , 1) ⟶ $\acute{B}$ (3 , 4)

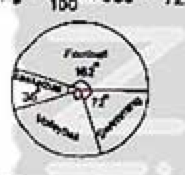
C (3 , 1) ⟶ $\acute{C}$ (5 , 4)

(5) The measure of the central angle of football $= \frac{45}{100} \times 360° = 162°$

The measure of the central angle of basketball $= \frac{10}{100} \times 360° = 36°$

The measure of the central angle of volleyball $= \frac{25}{100} \times 360° = 90°$

The measure of the central angle of swimming $= \frac{20}{100} \times 360° = 72°$



4 Alexandria

1

(1) $\mathbb{Z}^-$	(2) ⊂	(3) – 3
(4) =	(5) <	(6) {5}
(7) – 1	(8) 144	(9) (– 2 , – 7)
(10) 4	(11) 360°	(12) 0

2

(1) 12	(2) 7	(3) {0 , 1 , 2}
(4) (3 , 5)	(5) 6	(6) 150
(7) 40	(8) $\frac{1}{6}$	

3 (1) The order is : – 15 , – 9 , |– 9| , 16 and 17

(2) $\frac{(-5)^5}{(-5)^4} = -5$

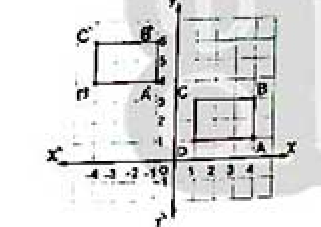
(3) The area $= \frac{22}{7} \times (3.5)^2 = 38.5$ cm²

(4) A (4 , 1) ⟶ $\acute{A}$ (– 1 , 4)

B (4 , 3) ⟶ $\acute{B}$ (– 1 , 6)

C (1 , 3) ⟶ $\acute{C}$ (– 4 , 6)

D (1 , 1) ⟶ $\acute{D}$ (– 4 , 4)



(5) The measure of the central angle of cultural $= \frac{5}{100} \times 360° = 18°$

The measure of the central angle of sports $= \frac{45}{100} \times 360° = 162°$

The measure of the central angle of social $= \frac{15}{100} \times 360° = 54°$

The measure of the central angle of arts $= \frac{35}{100} \times 360° = 126°$

5 El-Kalyoubia

1

(1) ⊄	(2) 8	(3) 7
(4) 2^{nd}	(5) (0 , 0)	(6) 360°
(7) $\frac{1}{2}$	(8) 36	(9) 6
(10) 2^{10}		

2

(1) – 6	(2) 1	(3) 154
(4) $\mathbb{Z}$	(5) {2}	
(6) {2 , 1 , 0 , ...}		
(7) 320 cm² , 446 cm²		(8) – 1

3 (1) [a] The probability that the ball is white $= \frac{5}{18}$

[b] The probability that the ball is black or red $= \frac{9+4}{18} = \frac{13}{18}$

[c] The probability that the is yellow = 0

[d] The probability that the ball is not black $= \frac{5+9}{18} = \frac{14}{18} = \frac{7}{9}$

(2) The area of the square = 14 × 14

= 196 cm²

The area of the circle $= \frac{22}{7} \times 7^2 = 154$ cm²

The area of the shaded part = 196 – 154

= 42 cm²

(3) The order is :

$(-2)^3 , (-1)^{15} , (-3)^2$ and $(-5)^2$

(4) [a] A (4 , 3) ⟶ $\acute{A}$ (2 , 0)

B (4 , 1) ⟶ $\acute{B}$ (2 , – 2)

C (1 , 1) ⟶ $\acute{C}$ (– 1 , – 2)

D (1 , 3) ⟶ $\acute{D}$ (– 1 , 0)

[b] The area = 3 × 2 = 6 square units

, the perimeter = (3 + 2) × 2

= 10 length units.

[c] rectangle.

6 El-Sharkia

1

(1) zero	(2) 314	(3) ⊂
(4) – 3	(5) (– 3 , 0)	(6) $\mathbb{N}$
(7) 180°	(8) first	(9) $\frac{1}{6}$
(10) 216	(11) – 20	(12) $(3)^3$

2

(13) {0} , $\mathbb{Z}^+$	(14) perimeter of the base	
(15) 40	(16) 0	(17) – 4
(18) 360°	(19) 10	
(20) diameter length , π		

3 (21) $\because 2X + 9 = 5$ $\therefore 2X = 5 - 9$

$\therefore 2X = -4$ $\therefore X = \frac{-4}{2}$

$\therefore X = -2$

$\therefore$ The S.S. = {– 2}

(22) – 17 + 19 + 17 = – 17 + 17 + 19 (Commutative property)

= (– 17 + 17) + 19 (Associative property)

= 0 + 19 (Additive inverse)

= 19 (Additive identity)

(23) The lateral area = 7 × 4 × 10 = 280 cm²

(24) $\because X + 4 < 7$ $\therefore X < 7 - 4$

$\therefore X < 3$

$\therefore$ The S.S. = {0 , 1 , 2}

(25) The measure of central angle of football $= \frac{40}{100} \times 360° = 144°$

The measure of central angle of basketball = $\frac{20}{100} \times 360° = 72°$

The measure of central angle of handball = $\frac{30}{100} \times 360° = 108°$

The measure of central angle of volleyball = $\frac{10}{100} \times 360° = 36°$



7 El-Monofia

1

(1) ∄	(2) – 1	(3) r^2
(4) $\frac{1}{6}$	(5) zero	(6) $\mathbb{Z}^-$
(7) 5	(8) zero	(9) – 20
(10) >	(11) (– 3 , 0)	(12) 4

2

(1) 0.5	(2) 16	(3) height
(4) 3^{rd}	(5) 120	(6) 54
(7) {– 1 , 0}	(8) 54	

3 (1) L.A. = 10 × 4 × 7 = 280 cm².

(2) ∵ 2 X + 9 = 3 ∴ 2 X = 3 – 9

∴ 2 X = – 6 ∴ X = $\frac{-6}{2}$

∴ X = – 3

∴ The S.S. = {– 3}

(3) The area of the rectangle = 8 × 7 = 56 cm².

The area of the circle = $\frac{22}{7} \times (3.5)^2$

= 38.5 cm².

The area of the shaded part

= 56 – 38.5 = 17.5 cm².

(4) 116 + 190 + (– 116) = 116 + (– 116) + 190

= [116 + (– 116)] + 190 = 0 + 190 = 190

(5) The measure of central angle of cultural

= $\frac{5}{100} \times 360° = 18°$

The measure of central angle of sports

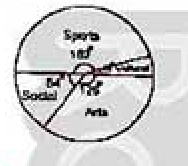
= $\frac{45}{100} \times 360° = 162°$

The measure of central angle of social

= $\frac{15}{100} \times 360° = 54°$

The measure of central angle of arts

= $\frac{35}{100} \times 360° = 126°$



8 El-Gharbia

1

(1) $\frac{1}{6}$	(2) ∅	(3) – 3
(4) – 2	(5) 10^2	(6) sure
(7) 1	(8) ∅	(9) πr^2
(10) – 25	(11) 3	(12) 120°

2

(1) {0}	(2) 213	(3) 196
(4) 1	(5) – 4	(6) – 17
(7) – 12	(8) – 7	

3 (1) ∵ 2 π r = 88 ∴ 2 × $\frac{22}{7}$ × r = 88

∴ r = $\frac{88}{2 \times \frac{22}{7}}$ = 14 cm.

∴ The area = $\frac{22}{7} \times (14)^2 = 616$ cm².

(2) ∵ 2 X + 1 ≤ 7 ∴ 2 X ≤ 7 – 1

∴ 2 X ≤ 6 ∴ X ≤ $\frac{6}{2}$

∴ X ≤ 3

∴ The S.S. = {1 , 2 , 3}

(3) A (1 , 1) ⟶ Á (– 1 , 3)

B (3 , 1) ⟶ B́ (1 , 3)

C (3 , 3) ⟶ Ć (1 , 5)

(4) The measure of central angle of first farm

= $\frac{25}{100} \times 360° = 90°$

The measure of central angle of second farm

= $\frac{35}{100} \times 360° = 126°$

The measure of central angle of third farm

= $\frac{40}{100} \times 360° = 144°$

9 El-Dakahlia

1

(1) ∉	(2) (– 2 , – 7)	(3) second
(4) 0	(5) >	(6) 314
(7) 1	(8) 24	(9) 4
(10) 1	(11) 8	(12) – 9

2

(1) magnitude , direction		(2) 1
(3) 0	(4) 360	(5) 12
(6) 120	(7) 400	(8) – 10

3 (1) ∵ 3 X – 7 ≤ 5 ∴ 3 X ≤ 5 + 7

∴ 3 X ≤ 12 ∴ X ≤ $\frac{12}{3}$

∴ X ≤ 4

∴ The S.S. = {4 , 3 , 2 , ...}

(2) $\frac{(-3)^{11}}{(-3)^5} = 3^6 = 729$

(3) [a] 2

[b] A (2 , 3) ⟶ Á (2 , 1)

B (4 , 3) ⟶ B́ (4 , 1)

C (4 , 5) ⟶ Ć (4 , 3)

(4) The perimeter of the base = (16 + 9) × 2

= 50 cm.

The lateral area = 50 × 5 = 250 cm².

The total area = 250 + 16 × 9 = 394 cm².

(5) The measure of central angle of 1^{st} kind

= $\frac{25}{100} \times 360° = 90°$

The measure of central angle of 2^{nd} kind

= $\frac{35}{100} \times 360° = 126°$

The measure of central angle of 3^{rd} kind

= $\frac{40}{100} \times 360° = 144°$

10 Ismailia

1

(1) ∅	(2) 0	(3) – 1
(4) ∅	(5) 3	(6) $\mathbb{Z}^+$
(7) (0 , 0)	(8) >	(9) 0
(10) r^2	(11) $\frac{1}{2}$	(12) 9

2

(1) {0}	(2) 400	(3) first
(4) 154	(5) 7	(6) 3 or – 3
(7) 10	(8) 100	

3 (1) $(-2)^2 \times 3^2 = 4 \times 9 = 36$

(2) The area of the semicircle

= $\frac{1}{2} \times \frac{22}{7} \times 7^2 = 77$ cm².

The area of the rectangle

= 20 × 14 = 280 cm².

The area of the figure = 77 + 280 = 357 cm².

(3) The edge length = 28 ÷ 4 = 7 cm.

The lateral area = 7 × 7 × 4 = 196 cm².

The total area = 7 × 7 × 6 = 294 cm².

(4) ∵ X + 5 = 4 ∴ X = 4 – 5

∴ X = – 1 ∴ The S.S. = {– 1}

(5) The number of black balls = 25 – (6 + 7)

= 12 balls.

[a] The probability that the ball is black

= $\frac{12}{25}$

[b] The probability that the ball is not red

= $\frac{12 + 6}{25} = \frac{18}{25}$

11 Suez

1
(1) zero (2) $\subset$ (3) second
(4) = (5) zero (6) 360
(7) $\mathbb{Z}^-$ (8) = (9) 6
(10) 7 (11) -20 (12) $(-3, 0)$

2
(1) $\mathbb{Z}^-$ (2) diameter length
(3) 32 (4) -4 (5) height
(6) 400 cm^2
(7) Perimeter of the rectangle (8) $\frac{1}{2}$

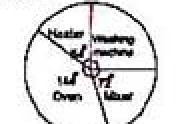
3
(1) $(-7) + 19 + 17 = (-7) + 17 + 19$ (Commutative property)
$= (-7 + 17) + 19$ (Associative property)
$= 10 + 19 = 29$

(2) $\because x - 2 \le 3$ $\therefore x \le 3 + 2$ $\therefore x \le 5$
$\therefore$ The S.S. $= \{5, 4, 3, ...\}$

(3) The area $= \frac{22}{7} \times 7^2 = 154$ cm^2.

(4) The perimeter of the base $= 10 \times 4 = 40$ cm.
The lateral area $= 40 \times 7 = 280$ cm^2.

(5) The measure of central angle of washing machine $= \frac{25}{100} \times 360° = 90°$
The measure of central angle of heater $= \frac{15}{100} \times 360° = 54°$
The measure of central angle of oven $= \frac{40}{100} \times 360° = 144°$
The measure of central angle of mixer $= \frac{20}{100} \times 360° = 72°$



12 Port Said

1
(1) r^2 (2) $\mathbb{Z}^-$ (3) 8
(4) zero (5) $\in$ (6) 2^7
(7) zero (8) 3 (9) 6
(10) zero (11) $(3, 5)$ (12) -4

2
(1) 6 (2) 40 (3) 1
(4) 360° (5) diameter length
(6) 5 (7) $\mathbb{N}$ (8) 3

3
(1) $4 \times 9 + 9 - 21 = 36 + 9 - 21$
$= 4 - 21 = -17$

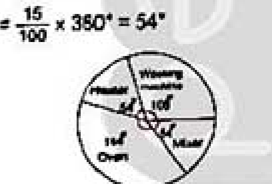
(2) [a] BC = 4 length units.
[b] A $(2, 3) \longrightarrow$ Á $(2, -1)$
B $(4, 3) \longrightarrow$ B́ $(4, -1)$
C $(4, 7) \longrightarrow$ Ć $(4, 3)$

(3) $\because x - 2 \ge 3$ $\therefore x \ge 3 + 2$ $\therefore x \ge 5$
$\therefore$ The S.S. $= \{5, 6, 7, ...\}$

-1 0 1 2 3 4 5 6 7

(4) The perimeter of the base $= 10 \times 4 = 40$ cm.
The lateral area $= 40 \times 4 = 160$ cm^2.

(5) The measure of central angle of washing machine $= \frac{30}{100} \times 360° = 108°$
The measure of central angle of heater $= \frac{15}{100} \times 360° = 54°$
The measure of central angle of oven $= \frac{40}{100} \times 360° = 144°$
The measure of central angle of mixer $= \frac{15}{100} \times 360° = 54°$



13 Damietta

1
(1) $\mathbb{N}$ (2) third (3) 16
(4) $(-2, 3)$ (5) $\frac{1}{2}$ (6) zero
(7) -4 (8) 256 (9) 120
(10) $\mathbb{Z}^-$ (11) 1 (12) $\{2\}$

2
(13) 4 (14) 10 (15) 6
(16) 8 (17) $\frac{1}{2}$ (18) 1
(19) $(-1, 5)$ (20) πr^2

3
(21) $\because 3x - 2 \ge 4$ $\therefore 3x \ge 4 + 2$
$\therefore 3x \ge 6$ $\therefore x \ge \frac{6}{3}$ $\therefore x \ge 2$
$\therefore$ The S.S. $= \{2, 3, 4, ...\}$

(22) $115 + 390 + (-115) = 115 + (-115) + 390$ (Commutative property)
$= [115 + (-115)] + 390$ (Associative property)
$= 0 + 390$ (Additive inverse)
$= 390$ (Additive identity)

(23) The total area $= 12 \times 12 \times 6 = 864$ cm^2.
(24) The area $= \frac{22}{7} \times 7^2 = 154$ cm^2.
(25) The measure of central angle of excellent $= \frac{15}{100} \times 360° = 54°$
The measure of central angle of good $= \frac{50}{100} \times 360° = 180°$
The measure of central angle of pass $= \frac{25}{100} \times 360° = 90°$
The measure of central angle of weak $= \frac{10}{100} \times 360° = 36°$

14 Kafr El-Sheikh

1
(1) 5 (2) 40 (3) >
(4) 0 (5) $(4, 3)$ (6) $\varnothing$
(7) zero (8) 216 (9) $\frac{1}{6}$
(10) r^2 (11) 45° (12) 1

2
(13) -2 (14) 40 (15) second
(16) 17 (17) 150 (18) 154
(19) 2 (20) 0

3
(21) $\because 2x + 1 < 5$ $\therefore 2x < 5 - 1$
$\therefore 2x < 4$ $\therefore x < \frac{4}{2}$ $\therefore x < 2$
$\therefore$ The S.S. $= \{0, 1\}$

(22) $\frac{2^3 \times 2^4}{2^5} = \frac{2^7}{2^5} = 2^2 = 4$

(23) The side length $= 36 \div 12 = 3$ cm.
The lateral area $= 3 \times 3 \times 4 = 36$ cm^2.
The total area $= 3 \times 3 \times 6 = 54$ cm^2.

(24) The area of the circle $= \frac{22}{7} \times 7^2 = 154$ cm^2.
The area of one sector $= 154 \div 8 = 19.25$ cm^2.

(25) The measure of central angle of music $= \frac{25}{100} \times 360° = 90°$
The measure of central angle of sport $= \frac{40}{100} \times 360° = 144°$
The measure of central angle of art $= \frac{35}{100} \times 360° = 126°$

15 El-Fayoum

1
(1) $\mathbb{Z}$ (2) -4 (3) zero
(4) 7 (5) > (6) -1
(7) xy (8) $(1, 0)$ (9) $\frac{1}{2}$
(10) $\frac{1}{4}$ (11) 2 : 3 (12) 60

2
(13) third (14) $\{0\}$ (15) $\varnothing$
(16) 150 (17) 7 (18) 5
(19) radius length (20) 0 , 1

3 (21) $\frac{(-5)^4}{(-5)^7} = (-5)^2 = 25$

(22) $\because 3(x+2) = 3$ $\quad \therefore x + 2 = \frac{3}{3}$

$\therefore x + 2 = 1$ $\quad \therefore x = 1 - 2$

$\therefore x = -1$ $\quad \therefore$ The S.S. $= \{-1\}$

(23) The area $= 3.14 \times 10^2 = 314$ cm^2.

(24) The perimeter of the base

$= (10 + 5) \times 2 = 30$ cm.

The lateral area $= 30 \times 8 = 240$ cm^2.

The total area $= 240 + 2 \times 10 \times 5$

$= 340$ cm^2.

(25) The measure of central angle of

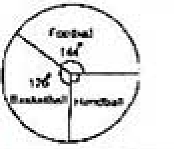
football $= \frac{40}{100} \times 360° = 144°$

The measure of central angle of

basketball $= \frac{35}{100} \times 360° = 126°$

The measure of central angle of

handball $= \frac{25}{100} \times 360° = 90°$



16 El-Menia

1 (1) 5 (2) 216 (3) $\frac{1}{6}$
(4) second (5) 0 (6) -1
(7) 16 (8) zero (9) 54 cm^2
(10) zero (11) zero (12) >

2 (1) 45° (2) 2 (3) $\mathbb{Z}^+$
(4) 40 (5) 360° (6) (1 , 2)
(7) 4 (8) -4

3 (1) $\because 3x - 5 \le 7$ $\quad \therefore 3x \le 7 + 5$

$\therefore 3x \le 12$ $\quad \therefore x \le \frac{12}{3}$ $\quad \therefore x \le 4$

$\therefore$ The S.S. $= \{1 , 2 , 3 , 4\}$

(number line: −1 0 1 2 3 4 5, with points at 1, 2, 3, 4)

(2) The perimeter of the base

$= (6 + 4) \times 2 = 20$ cm.

The lateral area $= 20 \times 8 = 160$ cm^2.

The total area $= 160 + 2 \times 6 \times 4$

$= 208$ cm^2.

(3) $\frac{2^8}{2^4} = 2^4 = 16$

(4) The probability that the ball is red $= \frac{7}{15}$

The probability that the ball is white $= \frac{8}{15}$

The probability that the ball is blue

$= \frac{0}{15} = 0$

The probability that the ball is red or

white $= \frac{7 + 8}{15} = 1$

(5) The measure of central angle of

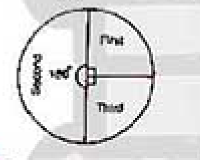
first farm $= \frac{25}{100} \times 360° = 90°$

The measure of central angle of

second farm $= \frac{50}{100} \times 360° = 180°$

The measure of central angle of

third farm $= \frac{25}{100} \times 360° = 90°$



17 Souhag

1 (1) 1 (2) Ø (3) zero
(4) 314 (5) zero (6) 0
(7) 14 (8) third (9) 0
(10) 154 (11) (−5 , −1) (12) ∈

2 (1) 40 (2) 4
(3) $\mathbb{Z}^+$, {0} , $\mathbb{Z}^-$ (4) 100
(5) 5 (6) 35 (7) 360°
(8) (1 , 5)

3 (1) $\because 2x - 3 = -9$ $\quad \therefore 2x = -9 + 3$

$\therefore 2x = -6$ $\quad \therefore x = \frac{-6}{2}$

$\therefore x = -3$ $\quad \therefore$ The S.S. $= \{-3\}$

(2) The perimeter of the base $= 6 \times 4$

$= 24$ cm.

The lateral area $= 24 \times 10 = 240$ cm^2.

The total area $= 240 + 2 \times 6 \times 6$

$= 312$ cm^2.

(3) $\because 3x - 2 \ge 4$ $\quad \therefore 3x \ge 4 + 2$

$\therefore 3x \ge 6$ $\quad \therefore x \ge \frac{6}{3}$

$\therefore x \ge 2$

$\therefore$ The S.S. $= \{2 , 3 , 4 , ...\}$

(4) The area of the rectangle $= 10 \times 7$

$= 70$ cm^2.

The area of the circle $= \frac{22}{7} \times 3.5^2$

$= 38.5$ cm^2.

The area of the shaded part

$= 70 - 38.5 = 31.5$ cm^2.

(5) The measure of central angle of

excellent $= \frac{15}{100} \times 360° = 54°$

The measure of central angle of

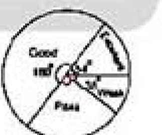
good $= \frac{50}{100} \times 360° = 180°$

The measure of central angle of

pass $= \frac{25}{100} \times 360° = 90°$

The measure of central angle of

weak $= \frac{10}{100} \times 360° = 36°$



18 Qena

1 (1) 54 (2) zero
(3) absolute value (4) zero
(5) (5 , 4) (6) zero
(7) 5 (8) 144

2 (1) 1 (2) −54 (3) −1
(4) −5 (5) half (6) >
(7) $\frac{1}{6}$ (8) 216 (9) third
(10) $\mathbb{Z}^-$ (11) −22 (12) ⊂

3 (1) $\because 2\pi r = 44$ $\quad \therefore r = \frac{44}{2 \times \frac{22}{7}} = 7$ cm.

$\therefore$ The area $= \frac{22}{7} \times 7^2 = 154$ cm^2.

(2) The perimeter of the base $= (6 + 4) \times 2$

$= 20$ cm.

The lateral area $= 20 \times 8 = 160$ cm^2.

The total area $= 160 + 2 \times 6 \times 4$

$= 208$ cm^2.

(3) $\frac{(-3)^7}{(-3)^5} = (-3)^2 = 9$

(4) $\because 3x - 2 \ge 4$ $\quad \therefore 3x \ge 4 + 2$

$\therefore 3x \ge 6$ $\quad \therefore x \ge \frac{6}{3}$

$\therefore x \ge 2$

$\therefore$ The S.S. $= \{2 , 3 , 4 , ...\}$

(number line: −1 0 1 2 3 4, with points at 2, 3, 4 and arrow)

(5) The measure of central angle of

washing machine $= \frac{30}{100} \times 360° = 108°$

The measure of central angle of

heater $= \frac{15}{100} \times 360° = 54°$

The measure of central angle of

oven $= \frac{40}{100} \times 360° = 144°$

The measure of central angle of

mixer $= \frac{15}{100} \times 360° = 54°$

19 Aswan

1 (1) −1 (2) 6 (3) 12
(4) (−2 , −7) (5) −8 (6) 0
(7) 5 (8) 9 (9) 4
(10) −10 (11) zero (12) (0 , 3)

2 (1) −4 (2) 1
(3) 100 cm^2 (4) (5 , 4)
(5) Lateral area (6) $\frac{1}{3}$
(7) $\mathbb{Z}^-$ (8) 6

3 (1) $37 + 25 + 63 + 75$
$= 37 + 63 + 25 + 75$
$= (37 + 63) + (25 + 75)$
$= 100 + 100 = 200$

(2) $\because 2\pi r = 88$ $\quad \therefore r = \frac{88}{2 \times \frac{22}{7}} = 14$ cm.

$\therefore$ The area $= \frac{22}{7} \times (14)^2 = 616$ cm^2.

(3) $\because X - 2 \geq 3$ $\quad \therefore X \geq 3 + 2$ $\quad \therefore X \geq 5$

$\therefore$ The S.S. $= \{5, 6, 7, ...\}$

−1 0 1 2 3 4 5 6 7

(4) The perimeter of the base $= 9 \times 4$
$= 36$ cm.

The lateral area $= 36 \times 20 = 720$ cm^2.

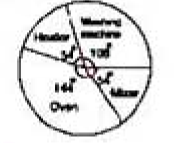
The total area $= 720 + 2 \times 9 \times 9$
$= 882$ cm^2.

(5) The measure of central angle of washing machine $= \frac{30}{100} \times 360° = 108°$

The measure of central angle of heater $= \frac{15}{100} \times 360° = 54°$

The measure of central angle of oven $= \frac{40}{100} \times 360° = 144°$

The measure of central angle of mixer $= \frac{15}{100} \times 360° = 54°$



20 South Sinai

1

(1) >	(2) $\not\subset$	(3) (5 , 4)
(4) $\frac{1}{6}$	(5) $\notin$	(6) − 1
(7) 2 r	(8) Ø	(9) $X < -5$
(10) 6	(11) 360°	(12) 3

2

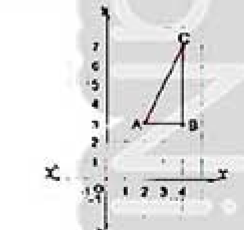
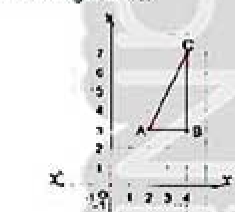
(1) 216	(2) 196	(3) − 3
(4) 0	(5) (− 1 , 5)	(6) second
(7) 40	(8) 6	

3 (1) $\frac{2^{11}}{2^4} = 2^7 = 128$

(2) $\because 2X + 9 = 3$ $\quad \therefore 2X = 3 - 9$
$\therefore 2X = -6$ $\quad \therefore X = \frac{-6}{2}$
$\therefore X = -3$ $\quad \therefore$ The S.S. $= \{-3\}$

(3) The area $= \frac{22}{7} \times 7^2 = 154$ cm^2.

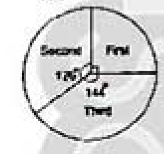
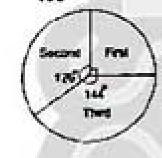
(4) BC = 4 length units.

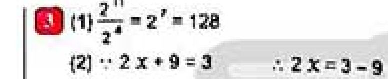



(5) The measure of central angle of first farm $= \frac{25}{100} \times 360° = 90°$

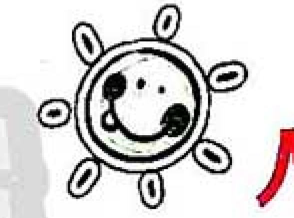
The measure of central angle of second farm $= \frac{35}{100} \times 360° = 126°$

The measure of central angle of third farm $= \frac{40}{100} \times 360° = 144°$

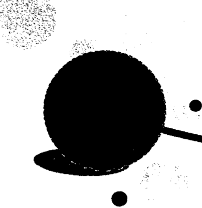









Notes



Model Examinations of the School Book

Model 1

Answer the following questions :

1 ***Complete each of the following :***

(1) $\{-11\}$ .... $\mathbb{Z}^+$

(2) 7 , 15 , 23 , 31 , 39 , ... , ... in the same pattern.

(3) $(-5) \times [7 + (-5)] =$ .... in the simplest form.

(4) The image of the point (4 , 5) by the translation (– 2 , 1) is (.............. , ...)

(5) The height of the cuboid in which (its lateral area is 200 cm^2. and the dimensions of its base are 8 cm. and 12 cm.) equals .... cm.

Choose the correct answer from those given :

(1) The value of the expression : $3 \times -5 - (2 \times 3)^2 \div 4 =$ ....

(a) – 31 (b) – 16 (c) $\frac{-51}{12}$ (d) – 24

(2) A coin is tossed 250 times , then the closest expected number of appearing a head equals ....

(a) 124 (b) 127 (c) 150 (d) 199

(3) If F is an odd number , then the even number in the following is ....

(a) F^2 (b) $F^2 + F$ (c) $2F + 1$ (d) F^3

(4) The opposite figure represents the quarter of a circle of radius length 2 cm.
, then its perimeter in cm. equals ....

(a) 2π (b) 5π (c) $\pi + 4$ (d) $4\pi + 4$

---

3 **(a)** If $7x = -42$ Find the value of : x

(b) Find the result of : $\frac{7^4 \times 7^5}{7^7}$

---

4 A pupil used a piece of card cartons in the shape of a rectangle of length 2.4 m. and width 1.6 m. to design a cubic case of edge length 60 cm.

Calculate the area of the remained card cartons after designing the case.

---

5 **(a)** A fair die is thrown once. Find :

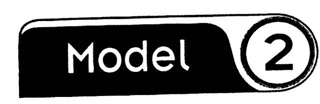
(1) The probability of appearing a prime number.

(2) The probability of appearing an even number.

(b) ***The following data shows the sociable case of a group of persons :***

Social case	Single	Married	Divorced	Widow	Total
Number of persons	350	500	100	50	**1000**

Represent these data by pie charts.



Model 2

Answer the following questions :

1 ***Complete each of the following :***

(1) $\mathbb{Z} = \mathbb{Z}^- \cup$ .... $\cup$ ....

(2) $(-125) \times (-4) =$ ....

(3) The term whose order is 50 in the pattern : $\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{5}$, $\frac{5}{6}$, ... is ....

(4) The set of solution of the inequality : $-2 < x \le$ zero in $\mathbb{Z}$ is ....

2 ***Choose the correct answer from those given :***

(1) Which of the following is the closest to $11^2 + 9^2$?

(a) 22 + 18 (b) 211 + 29 (c) 120 + 80 (d) 120 + 20

(2) If n is a negative integer number , which of the following is the smaller ?

(a) 7 + n (b) 7 – n (c) $\frac{-7}{n}$ (d) 7 n

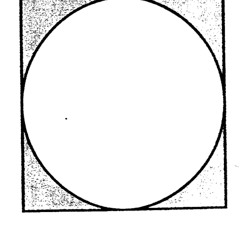
(3) ***In the opposite figure :***

A spinner game consists of 24 equal circular sectors , $\frac{1}{3}$ the sectors are red , $\frac{1}{8}$ the sectors are violet $\frac{1}{2}$ the sectors are blue , $\frac{1}{24}$ the sectors are green

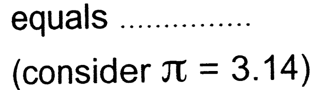
The player rotated the pointer , on any colour the chance of stopping the pointer on it is the greatest ?

(a) the green. (b) the blue (c) the violet. (d) the red.

(4) ***In the opposite figure :***

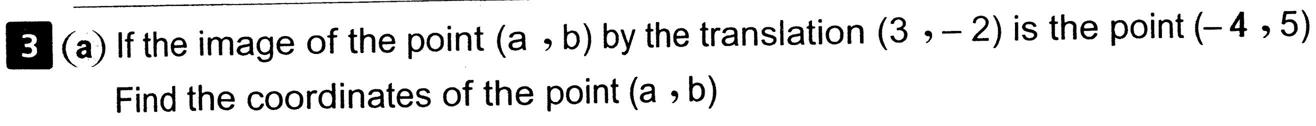


A square of side length 20 cm. , then the area of the shaded part in cm^2 equals ....



(consider $\pi = 3.14$)

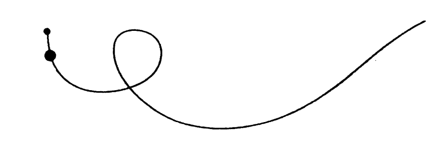
(a) 400 (b) 314 (c) 96 (d) 86



3 **(a)** If the image of the point (a , b) by the translation (3 , – 2) is the point (– 4 , 5)

Find the coordinates of the point (a , b)





(b) A box contains 4 white balls and 6 red balls , one ball is drawn randomly.

Find the probability that the drawn ball is :

(1) White　　　　　　　　　　**(2)** Not white.

---

4 **(a)** Find the result : $\frac{5^6 \times (-5)^7}{5^9}$

(b) A box in the shape of a cuboid without lid. The inner dimensions of its base are 2.5 m. and 1.5 m. and its inner height is 70 cm. It is wanted to cover its side faces and the floor with iron sheets , the price of the square metre of it is L.E. 10 Find :

(1) The area covered with the iron sheets.

(2) The price of the iron sheet which are used.

---

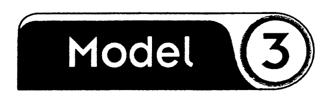
5 **(a)** If $x \times [7 - (-2)] = (-8 \times 9) \times (-1)$, find the value of : x

(b) ***The following table shows the percentages of the production of meat in 3 slaughter houses during a month :***

The slaughter	First	Second	Third
The percentage	25 %	35 %	40 %

(1) Represent these data by pie charts.

(2) If the production of the first slaughter is 1125 ton in a month. Find the total production of the three slaughters in this month.



Model 3

Answer the following questions :

1 ***Complete each of the following :***

(1) $\mathbb{Z}^+ \cap \mathbb{Z}^- =$ ....

(2) $-(-12) \times (-5) =$ ....

(3) 1 , 1 , 2 , 3 , 5 , 8 , 13 , ... , 34 , 55 , ... (in the same pattern)

(4) The image of the point A (2 , – 1) by the translation (x – 1 , y + 3) is ....

(5) The lateral area of the cuboid whose length is 5 cm. and width is 2 cm. , and its height is 2 cm. equals ....

---

2 ***Choose the correct answer from those given :***

(1) If the perimeter of one face of a cube equals 20 cm. , then its total area = ... cm^2.

(a) 100　　　　(b) 120　　　　(c) 150　　　　(d) 200

(2) If $x = -1$, $y = -2$, then the **negative** number in the following is ....

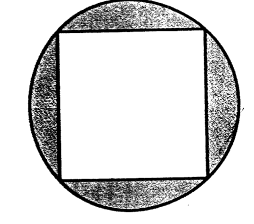
(a) $x^2 + y$ (b) $x + y^2$ (c) $x^2 - y$ (d) $x^2 + y^2$

(3) The closest result to zero in the following is ....

(a) $(1 - 0.9)^2$ (b) $1 - (0.9)^2$

(c) $\frac{1}{1 - 0.9}$ (d) $(1 + 0.009) + 0.1$

(4) ***In the opposite figure :***



A square of area 4 cm^2 is drawn inside a circle of area (2π) cm^2 , then the area of the shaded part in cm^2 = ...

(a) $2\pi - 4$ (b) $4 - 2\pi$ (c) $4 + 2\pi$ (d) 4π

---

3 **(a)** A basket contains balls numbered from 1 to 15 a ball is drawn randomly. What is the probability that the drawn ball :

(1) Carries an even number ?

(2) Carries a number greater than or equal to 11 ?

(b) **(1)** Find the solution set in $\mathbb{Z}$ of the equation : $2x + 9 = 3$

(2) Find in $\mathbb{N}$ the solution set of the inequality : $3x - 2 < 7$

---

4 **(a)** Calculate the lateral area and the total area of a case in the shape of a cuboid if its base is a square of side length 6 cm. and its height is 10 cm.

(b) In a cartesian coordinates plane , locate the points A (0 , 4) , B (2 , 1) and C (– 2 , 1) , then find :

(1) The length of $\overline{BC}$

(2) The image of Δ ABC by the translation (0 , – 2)

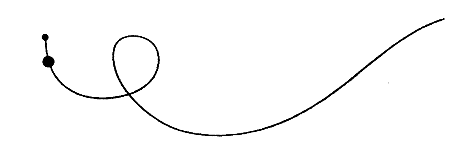
---

5 **(a)** Find the result of : $\frac{(-3)^3 \times (-3)^2}{(-3)^4}$

(b) ***The following table shows the favourite sport at a youth center :***

The favourite sport	Football	Basketball	Handball	Volleyball	Table tennis
The percentage	40 %	18 %	12 %	20 %	10 %

Represent these data by circular sectors.



Model 4

Answer the following questions :

1 ***Complete each of the following :***

(1) $\mathbb{Z} = \mathbb{N} \cup$ ....

(2) $[9 + (-5)] \times (-11) =$ ....

(3) If $x + 3 = |-7|$, then $x =$ ....

(4) A class of 50 pupils. If the probability of success for those pupils in the end year exam is 0.8 , then the expected number for the pupils who will succeed = ...

(5) The edge length of the cube whose total area is 600 cm^2 is ....

---

2 ***Choose the correct answer from those given :***

(1) $2^3 \times 2^5 =$ ....

(a) 2^8 (b) 2^{15} (c) 4^8 (d) 4^{15}

(2) The number which completes the pattern : 1 , 2 , 3 , 5 , 8 , 13 , 21 , 34 , ... is ....

(a) 47 (b) 53 (c) 55 (d) 65

(3) A fair die is thrown once , then the probability of appearing the number 5 equals ....

(a) zero. (b) $\frac{1}{6}$ (c) $\frac{5}{6}$ (d) 1

(4) The height of the cuboid whose lateral area is 160 cm^2 and dimensions of its base are 7 cm. and 3 cm. equals ....

(a) 6 cm. (b) 8 cm. (c) 10 cm. (d) 16 cm.

---

3 **(a)** Find the result of : $\frac{(-5)^{11} \times (5)^5}{(5)^{13}}$

(b) The perimeter of the base of a cuboid is 32 its height = 10 cm. , the length of its base = 9 cm. Calculate :

(1) Its lateral area. **(2)** Its total area.

---

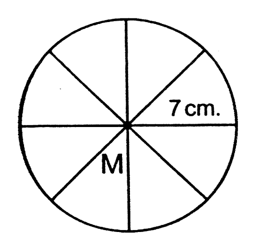
4 **(a)** Find the solution set of the inequality : $2x + 1 < 5$, where $x \in \mathbb{N}$, then represent the solution set on the number line.

(b) In the experiment of throwing a fair die once and observing the number of dots on the upper face. Write the sample space , then find the probability of each of the following events :

(1) Getting a number greater than 6

(2) Getting a number satisfies the inequality $3 < x < 5$

5 (a) A circle of radius length 7 cm. is divided into 8 equal circular sectors. Find :



(1) The area of one circular sector.

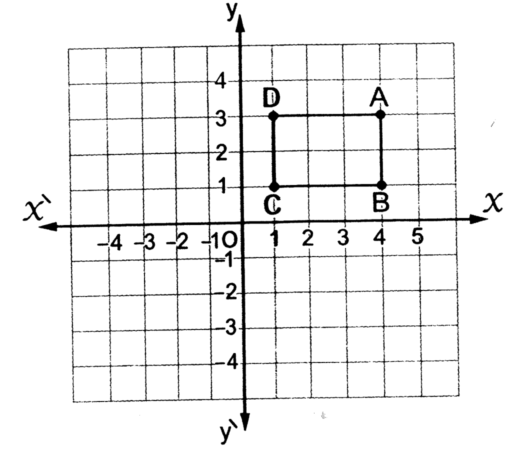
(2) The measure of the central angle of the sector.

$\left(\text{consider } \pi = \frac{22}{7}\right)$

(b) In the cartesian coordinates plane the rectangle ABCD where :

A (4 , 3) , B (4 , 1) , C (1 , 1) and D (1 , 3)

Find its image by the translation (x – 2 , y – 3)



Model 5

Answer the following questions :

1 ***Choose the correct answer from those given :***

(1) If a $\in \{2 , -5 , -3\} \cap \{5 , -2 , -3\}$, then a = ...

(a) 2 (b) – 3 (c) – 5 (d) 5

(2) $\mathbb{Z} - \mathbb{N}$ = ...

(a) $\mathbb{N} - \{\text{zero}\}$ (b) $\mathbb{Z}^+$ (c) $\mathbb{Z}^-$ (d) $\mathbb{Z}$

(3) $\mathbb{N} \cup \mathbb{Z}$ = ...

(a) $\mathbb{Z}$ (b) $\mathbb{N} - \{\text{zero}\}$ (c) $\mathbb{Z}^-$ (d) $\mathbb{Z}^+$

(4) If $x + 3 = 8$, $x \in \mathbb{Z}^-$, then the solution set is ....

(a) {– 3} (b) {5} (c) {– 5} (d) ∅

(5) If $2x + 5 > 3$, $x \in \mathbb{Z}$, then the solution set of the inequality is ....

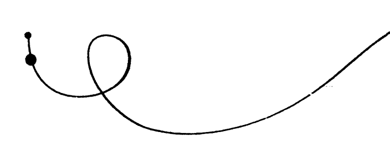
(a) $\mathbb{N}$ (b) $\mathbb{N} - \{\text{zero}\}$ (c) $\mathbb{Z}^-$ (d) $\mathbb{Z}^+$

(6) The image of the point A (– 4 , 3) by the translation (– 1 , – 4) is ....

(a) (– 5 , – 7) (b) (– 5 , – 1) (c) (– 7 , 3) (d) (– 3 , – 1)

---

2 Draw the triangle ABC where A (1 , 1) , B (– 3 , – 1) , C (0 , – 5) , then find its image by the translation (5 , 0) on the graph.



3 (a) In the experimental forming a number of two digits (without repeating the digit) from the set of digits $\{1, 2, 3\}$ Find :

(1) The probability of getting an odd prime number.

(2) The probability of getting an even number.

(b) ***The following table shows the percentage of the production of a factory of house electrical sets :***

The kind of set	Washing machine	Heater	Oven	Mixture
The percentage	30 %	15 %	40 %	15 %

Represent these data by the circular sectors.



Answer the following questions :

1 ***Choose the correct answer from those given :***

(1) $(-19)^0 + (19)^0 =$ ....

(a) -1 (b) zero (c) 1 (d) 2

(2) $(-1)^{104} + (-1)^{103} =$ ....

(a) zero (b) -1 (c) 1 (d) 2

(3) $|-9| + 3 \div 2$ .... $\mathbb{Z}$

(a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$

(4) At throwing a fair die and observing the upper face , then the probability of getting a number greater than 6 equals ....

(a) $\varnothing$ (b) zero (c) $\frac{1}{6}$ (d) $\frac{1}{3}$

(5) The measure of the angle of the sector which represents $\frac{1}{4}$ the circle equals ....

(a) 30° (b) 45° (c) 60° (d) 90°

(6) $\mathbb{Z}^+ - \mathbb{Z}^- =$ ....

(a) $\varnothing$ (b) $\mathbb{N}$ (c) $\mathbb{N} - \{\text{zero}\}$ (d) $\mathbb{Z}$

---

2 If $a = 3^2$, $b = 2^3$ Find : $(a - b)^5$

---

3 (a) The point (a , b) , its image is (5 , – 4) by the translation (2 , – 3) , what is the coordinates of (a , b) ?

(b) A swimming pool , the dimensions of its base are 40 m. , 10 m. , its height = 2.5 m. It is wanted to cover it with tiles of ceramic in the shape of a square of side length 25 cm. for every one tile :

(1) How many complete cartoons are needed for covering the floor and the sides of the pool each cartoon contains 16 tiles.

(2) What is the cost of covering the pool with tiles if the cost of the square metre is L.E. 45 and L.E. 5 for sticking one square metre.

---

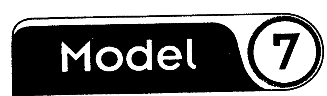
4 (a) A box contains 5 white balls , 3 blue balls and 8 red balls , the all are identical a ball is drawn blindly. What is the probability that the drawn ball is :

(1) green ? **(2)** not red ?

(b) ***The following table shows the percentage of the number of students participants in the school activities :***

The activity	Culture	Sport	Social	Art
The percentage	5 %	45 %	15 %	35 %

Represent these data by pie charts.



Answer the following questions :

1 ***Choose the correct answer :***

(1) $\mathbb{Z} - \mathbb{N} =$ ....

(a) $\mathbb{Z}^+$ (b) $\{0\}$ (c) $\mathbb{Z}^-$ (d) 0

(2) An integer number included between – 2 , 3 is ....

(a) – 2 (b) – 1 (c) – 3 (d) – 4

(3) The number which satisfies the inequality $x > -2$ is ....

(a) – 1 (b) – 4 (c) – 3 (d) – 2

(4) $(-3)^2 <$ ....

(a) $(1 - 2)^3$ (b) 2^3 (c) $(-3)^3$ (d) 3^3

(5) A circle of diameter length 8 cm. , then its area = ... π cm^2.

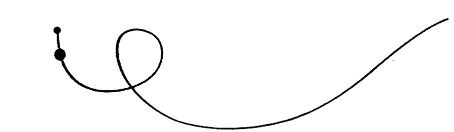
(a) 4 (b) 8 (c) 16 (d) 64

---

2 ***Complete the following :***

(1) The lateral area of the cuboid = ...

(2) The random experiment is ....



(3) $7\left(6 + (-3)\right) = 7 \times$ .... + ... = ...

(4) The result of : $\frac{(-7)^5 \times 7}{(-7)^6}$ = ...

(5) The numerical pattern (2 , 6 , 10 , 14 , ...) its rule is ....

(6) A cube of total area 150 cm^2 , then the length of its edge is ....

---

3 (a) Find the solution set of the following inequality in $\mathbb{Z}$:

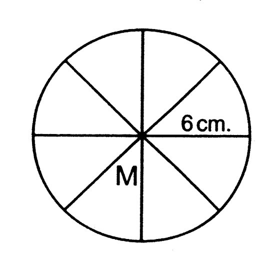
$-1 < 2x + 3 \leq 5$, then represent it on the number line.

(b) ***In the opposite figure :***

A circle M of radius length 6 cm. is divided into 8 circular sectors equal in area.

Find the area of one sector.

($\pi = 3.14$)



---

4 (a) Neveen used a piece of card cartoon squared shape of side length 80 cm. with tools to design a cuboid of length 40 cm. , width 20 cm. and height 30 cm. Show if the piece of card cartoon is enough to design the cuboid or not.

(b) Locate in the cartesian coordinates plane the points A (– 3 , 4) , B (1 , 4) , C (1 , 2) , then find :

(1) AB = ... , BC = ...

(2) The image of Δ ABC by the translation (0 , – 3)

---

5 (a) A box contains 6 white balls and 9 red balls , the all are identical. a ball is drawn randomly.

Write the sample space then calculate the following probabilities :

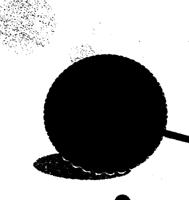
(1) Drawing a white ball. **(2)** Drawing a red ball.

(3) Drawing a ball not red and not white.

(b) ***The following table shows the percentage of the production of a factory of electric sets (4 kinds) :***

Kind of the set	TV	Washing machine	Refrigerator	Cooker
Amount of the production	35 %	25 %	15 %	25 %

Represent these data by pie charts.



Some Examinations from Different Governorates

1 Cairo Governorate



Answer the following questions : (Calculator is allowed)

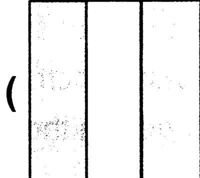
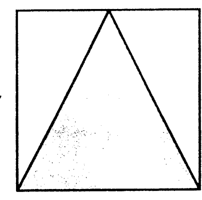
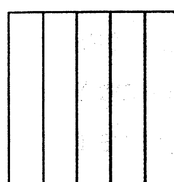
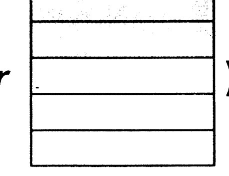
1 ***Choose the correct answer from those given :***

(a) The following expected number to complete this pattern :
50 , 46 , 42 , 38 , 34 , ... (32 *or* 30 *or* 28 *or* 24)

(b) If $x - 3 = 5$, then $x =$ .... where $x \in \mathbb{Z}$ (-8 *or* -2 *or* 2 *or* 8)

(c) If the area of one face of a cube equals 9 cm^2 , then its total area = ... cm^2 (12 *or* 27 *or* 36 *or* 54)

(d) Which of the following figures the shaded area represents $\frac{2}{3}$ of the square?

( *or*  *or*  *or* )

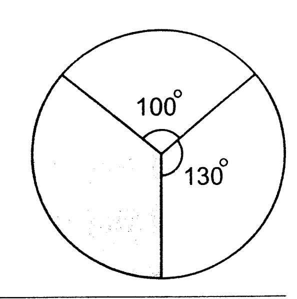
2 ***Complete the following :***

(a) $|-2| + 2 =$ ....

(b) Probability of the impossible event equals ....

(c) $15 + 17 + (-15) =$ ....

(d) **In the opposite figure :**
Measure of the central angle of the shaded circular sector equals ....°



3 (a) Find the solution set of the inequality : $3x - 2 < 7$ where $x \in \mathbb{N}$, then represent it on the number line.

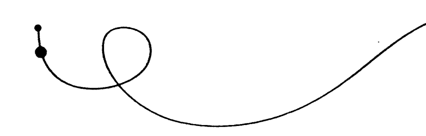
(b) Find the result of : $\frac{(-2)^4 \times 2^3}{2^5}$

4 (a) Find the solution set of the equation : $2x + 1 = 9$ where $x \in \mathbb{Z}$

(b) The circumference of a circular garden is 157 metres. Find :

(1) The length of the diameter of the garden in metres.

(2) The area of the garden in square metres. ($\pi \simeq 3.14$)



5 (a) On the lattice , determine each of the following points :

A (1 , 1) , B (3 , 1) and C (3 , 2) , then find :

(1) The length of $\overline{BC}$

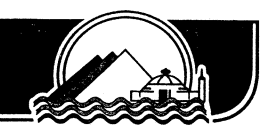
(2) The image of the triangle ABC by the translation (x + 3 , y + 2)

(b) ***The following table shows the percentages of the production of electrical sets in a factory :***

Kind of the set	Refrigerator	Cooker	Heater	TV
The percentage of the production	30 %	20 %	25 %	25 %

Represent the previous data by a pie chart.

2 Giza Governorate



Answer the following questions : (Calculator is allowed)

1 ***Complete the following :***

(a) The equation $4x^2 + 2 = 6$ of the .... degree.

(b) The total area of the cube with 3 cm. edge length = ... cm^2.

(c) The image of the point A (2 , 5) by translation (x + 1 , y – 2) is ....

(d) If $X \subset \{2 , -3\} \cap \{5 , -3\}$, then X = ...

---

2 ***Choose the correct answer :***

(a) An integer included between – 2 , 1 is ....

(– 2 *or* – 1 *or* 3 *or* – 3)

(b) The measure of the angle for the circular sector of half a circle is ....°

(90 *or* 120 *or* 180 *or* 270)

(c) If $x = |-2|$, y = – 3 , then xy = ... (5 *or* – 5 *or* 6 *or* – 6)

(d) If a fair die is tossed once , then the probability of appearing of the number 5 = ... (zero *or* $\frac{1}{6}$ *or* $\frac{5}{6}$ *or* 1)

---

3 (a) **(1)** Find the result of : $\frac{7^4 \times 7^5}{7^7}$

(2) Find the solution set of the inequality : $x - 2 < 1$ in $\mathbb{N}$

(b) Calculate the surface area of the circle of diameter length 14 cm.

4 (a) Find the solution set of the equation : $3x + 7 = 4$ in $\mathbb{Z}$

(b) The total area of a cuboid is 132 cm^2 and its lateral area is 112 cm^2. Calculate the area of its base.

---

5 (a) A box contains 5 white balls , 8 red balls all of them are symmetric , a ball is selected without looking it , what is the probability that the selected ball is :

(1) White. **(2)** Red.

(b) ***The following table shows the percentage of the production of a factory of electric sets :***

Type of the set	Washing machine	Heater	Cooker	TV
Percentage of the production	30 %	15 %	40 %	15 %

Represent these data by pie charts.

3 Alexandria Governorate



Answer the following questions :

1 ***Choose the correct answer from those given :***

(a) $|-5| + 3$ .... $\mathbb{Z}$ ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

(b) Twice the number y subtracted from it 4 , the symbolic expression for this situation is .... ($y - 4$ *or* $2y - 4$ *or* $y + 4$ *or* $2y + 4$)

(c) If the set of substitution is $\{1 , 2 , 3 , 4\}$, then the set of solution of the equation = $x + 6 = 10$ is .... ($\{1\}$ *or* $\{2\}$ *or* $\{3\}$ *or* $\{4\}$)

(d) If the probability that the pupil solve the problem is 0.7 , then the number of problems expected to be solved from the same kind from 20 problems equals .... (7 *or* 10 *or* 14 *or* 20)

---

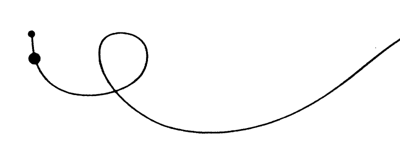
2 ***Complete the following :***

(a) The surface area of the circle = ...

(b) The set of even numbers $\cap$ the set of odd numbers = ...

(c) The ascending order of the numbers : (-9) , 17 , $|-9|$, -15 , 16 is ....

(d) Sample space for tossing a coin once = ...



3 (a) Find the solution set of inequality : $2x - 3 \geq 1$ where $x \in \mathbb{Z}$, then represent it on the number line

(b) A cube of edge length 6 cm. , find its lateral area and its total area.

---

4 (a) ***The following table shows the percentage of the production of a factory of house electrical sets :***

The kind of set	Washing machine	Heater	Cooker	Mixture
The percentage	30 %	15 %	40 %	15 %

Represent these data by circular sectors.

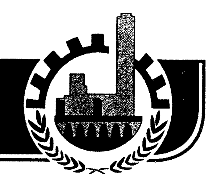
(b) Find the solution set in $\mathbb{Z}$ of the equation : $2x + 9 = -23$

---

5 (a) Find the result of : $\frac{(2)^5 \times (-2)^3}{(-2) \times (2)^4}$

(b) In the Cartesian coordinates plane , locate each of the following points A (2 , 3) , B (4 , 3) , C (4 , 5) , then find the image of Δ ABC by the translation (0 , – 4) on the drawing.

4 El-Kalyoubia Governorate



Answer the following questions :

1 ***Choose the correct answer between brackets :***

(a) $(-1)^{105} + (-1)^{20} =$ ………… (2 *or* 1 *or* – 1 *or* zero)

(b) If $x + 2 = |-5|$, then $x =$ ………… (– 7 *or* 7 *or* 3 *or* – 3)

(c) There are 40 pupils in a classroom. If the probability of the pupils who succeed is 0.7 , then the number of the pupils who are expected to fail = ………… (28 *or* 20 *or* 12 *or* 15)

(d) The total area of a cube is 600 cm^2, then its edge length = ………… cm. (5 *or* 10 *or* 6 *or* 100)

---

2 ***Complete each of the following :***

(a) $\mathbb{Z}^+ \cup \{zero\} =$ …………

(b) The image of the point (5 , 4) by translation $(x + 2 , y - 3)$ is …………

(c) A circle whose circumference is 44 cm., then its radius length is ………… cm. ($\pi = \frac{22}{7}$)

(d) The descending order of the numbers : – 9 , 2 , 5 , – 12 is …………

3 (a) Find the solution set of the equation : $2x + 7 = 3$ in $\mathbb{Z}$

(b) A box without a cover in the shape of a cuboid. Its length is 16 cm., its width is 7 cm. and its height is 19 cm. Find :

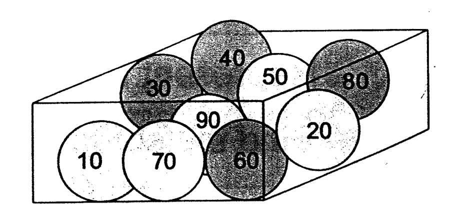
(1) Its lateral area. (2) Its total area.

---

4 (a) Find the value of : $\frac{(-2)^6 \times 2^4}{(-2)^7 \times 2^2}$

(b) ***In the opposite figure :***

A box contains 9 symmetrical cards numbered from (10 to 90) which are mixed together and a card was drawn randomly.



Calculate the probability of each of the following events :

(1) A number divisible by 5 (2) A number divisible by 3

(3) An odd number.

---

5 (a) Find the solution set of the inequality : $3x - 5 \leq 4$, $x \in \mathbb{N}$

(b) ***The following table shows the percentage of the most favourite subjects to 6th primary students :***

Subject	Arabic	Math	Science	English
The percentage	35 %	25 %	15 %	25 %

Represent these data by a pie chart.

5 El-Sharkia Governorate



Answer the following questions :

1 ***Choose the correct answer :***

(a) $P \cap E =$ .... ({2} *or* {3} *or* {5} *or* {7})

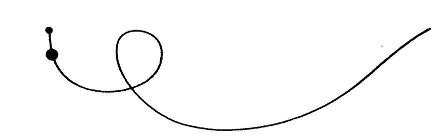
(b) The greatest integer number satisfies the inequality $3 \leq x < 6$ is ....

(3 *or* 4 *or* 5 *or* 6)

(c) The measure of the angle of the circular sector which represents $\frac{1}{2}$ the circle equals ....° (45 *or* 60 *or* 90 *or* 180)

(d) If F is an odd number , then the even number in the following is ....

(F^2 *or* $F^2 + F$ *or* $2F + 1$ *or* F^3)



2 ***Complete the following :***

(a) 2 , 6 , 18 , 54 , ... , ... (in the same pattern)

(b) The side lengths of a triangle are 3 cm., 4 cm., 5 cm. , then its perimeter = ... cm.

(c) If a die is tossed once , then the probability of getting an even number = ...

(d) The point (a , b) , its image is (5 , – 4) by the translation (2 , – 3) , then the coordinates of the point (a , b) = ...

---

3 (a) Find the result of : $\frac{(-8)^3 \times (8)^4}{(-8)^7}$

(b) Find the solution set of the inequality : $2x + 9 < 1$ where $x \in \mathbb{Z}$, then represent the solution set on the number line.

---

4 (a) A circle , its diameter length is 12 cm. Calculate its surface area. (Consider $\pi = \frac{22}{7}$ or 3.14)

(b) Find the solution set of the equation : $6x + 2 = 14$ where $x \in \mathbb{Z}$

---

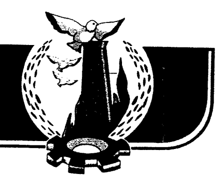
5 (a) A case in the shape of a cuboid , its length is 7 cm. , its width is 5 cm. and its height is 3.5 cm. Find its lateral area and its total area.

(b) ***The following table shows the percentages for producing chickens in four farms monthly :***

Farm	1^{st}	2^{nd}	3^{rd}	4^{th}
The percentage of production	40 %	25 %	20 %	15 %

Represent these data by circular sectors.

6 El-Monofia Governorate



Answer the following questions : (Calculator is allowed)

1 ***Complete each of the following :***

(a) $\mathbb{Z}^+ \cap \mathbb{Z}^- =$ ....

(b) The image of the point (2 , 1) by translation (x , y – 3) is (............ , ...)

(c) If S is a sample space of a random experiment , then P (S) = ...

(d) The face area of a cube is 4 cm^2 , then its volume = ... cm^3

2 ***Choose the correct answer between brackets :***

(a) $(-1)^{100} + (-1)^{101} =$ .... (1 *or* – 1 *or* zero *or* – 2)

(b) The number which if it is added to its double , the result will be 9 , is .... (2 *or* 3 *or* 4 *or* 5)

(c) The multiplicative identity in the multiplication of natural numbers , added it to 99 = ... (zero *or* 1 *or* 99 *or* 100)

(d) Select one card from a box contains 10 cards numbered even number from 2 to 20 , then the probability of appearing of a number divisible by 3 is .... (0.2 *or* 0.3 *or* 0.4 *or* 0.5)

---

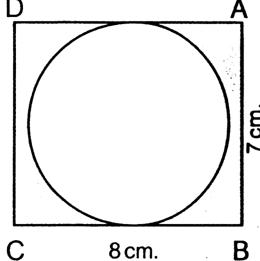
3 (a) Find in $\mathbb{N}$ the S.S. of the equation : $2x + 6 = 4$

(b) Find the result of : $6 \times [(-2) + (-7)]$ (Use the distribution property)

---

4 (a) Find the solution set of the following inequality in $\mathbb{Z}$: $x + 4 < 7$, then represent it on the number line.

(b) ***In the opposite figure :***



ABCD is a rectangle where its length = 8 cm.

and its width = 7 cm.

Calculate the area of the shaded part. $\left(\pi = \frac{22}{7}\right)$

---

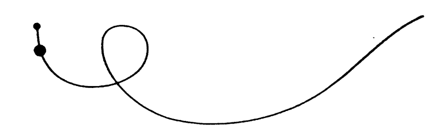
5 (a) A box without lid in the shape of a cuboid , the inner dimensions of its base are 2 m. and 3 m. and its inner height is 1 m. It is wanted to cover its side faces and its floor by a metallic sheets , the price of one square metre is L.E. 15

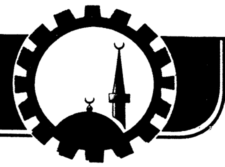
Find the price of the needed metallic sheets.

(b) ***When asked students of a classroom for their favorite TV programs show follows :***

Kind of the programs	Musician	Cultural	Sporting
The percentage	15 %	25 %	....

Complete the table , then represent these data by using the circular sectors.





7 El-Gharbia Governorate

Answer the following questions :

1 ***Choose the correct answer :***

(a) $\frac{9}{20}$ = ... % (9 *or* 18 *or* 27 *or* 45)

(b) The number which satisfies the inequality $x > -2$ is ....

(−1 *or* −2 *or* −3 *or* −4)

(c) If $x = -1$, $y = -2$, then the negative number in the following is ....

($x + y^2$ *or* $x^2 + y$ *or* $x^2 - y$ *or* $x^2 + y^2$)

(d) At throwing a fair die and observing the upper face , then the probability of getting a number greater than 6 = ...

($\frac{1}{2}$ *or* $\frac{1}{6}$ *or* zero *or* $\varnothing$)

---

2 ***Complete :***

(a) If $\frac{5}{9} = \frac{15}{x}$, then x = ...

(b) $19 - |-9|$ = ...

(c) If the perimeter of one face of a cube equals 12 cm. , then its total area = ... cm^2.

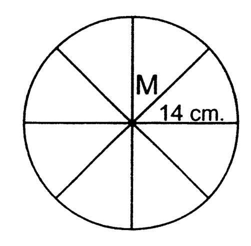
(d) A class of 50 pupils. If the probability of success for those pupils in the end year exam is 0.8 , the expected number for the pupils who will succeed = ... pupils.

---

3 (a) Find the solution set in $\mathbb{Z}$ of the equation : $3x + 2 = -19$

(b) ***In the opposite figure :***

M is a circle of radius length 14 cm. is divided into 8 equal circular sectors. Find :



(1) The area of one circular sector.

(2) The measure of the central angle of a sector. $\left(\pi = \frac{22}{7}\right)$

---

4 (a) Find the solution set in $\mathbb{Z}$ of the inequality : $1 - 8x < 33$, then represent the solution set on the number line.

(b) A room in the form of a cuboid , its inner dimensions are 7 m. , 5 m. and 3.5 m. height , it is wanted to paint its lateral walls and the ceiling. The cost price of one square metre of paint is L.E. 11 Calculate the required cost.

5 (a) Find the result of : $\frac{9^6 \times (-9)^3}{9^2 \times (-9)^5}$ by showing the steps.

(b) ***The following table shows the percentages of production of a factory for three kinds of electric water heaters :***

The kind	First	Second	Third
The percentage of the production	55 %	30 %	15 %

(1) Represent these data by circular sectors.

(2) If the total production in the factory is 2000 heaters , find the number of heaters of the second kind.

8 El-Dakahlia Governorate



Answer the following questions :

1 ***Complete :***

(a) If 2 y = 8 , then y + 3 = ...

(b) $-3^2 + 1$ = ...

(c) The point (x , y) , its image (5 , – 4) by translation (2 , – 3) , then the coordinate of the point (x , y) = (............ , ...)

(d) 275 cm. ≃ .... (to the nearest metre)

2 ***Choose the correct answer between brackets :***

(a) Measure of central angle of circular sector is 60° , then it represents .... from surface area of the circle. ($\frac{1}{4}$ ***or*** $\frac{1}{5}$ ***or*** $\frac{1}{6}$ ***or*** $\frac{1}{8}$)

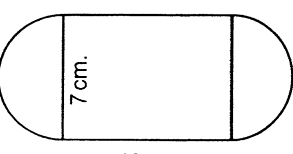
(b) If the probability a pupil solve the problem is 0.7 , then the number of expect problems from 20 problems is .... (13 ***or*** 7 ***or*** 14 ***or*** 27)

(c) Salma paid L.E. x to bought three pens , then the price of each pen is L.E. .... ($\frac{3}{x}$ ***or*** $\frac{x}{3}$ ***or*** $3x$ ***or*** $3 + x$)

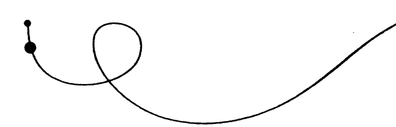
(d) $3^2 + 3^2 + 3^2$ = ... (3^6 ***or*** 9^2 ***or*** 3^3 ***or*** 9^6)

3 (a) Find in $\mathbb{Z}^+$ the solution set of the inequality : $2x + 1 < 9$

(b) ***In the opposite figure :***



This figure represents a rectangle where its length = 10 cm., its width = 7 cm. and two semicircles , find the area of the figure. $\left(\pi = \frac{22}{7}\right)$



4 (a) By using the properties of addition in $\mathbb{Z}$, find the result of :

$-15 + 29 + 15$ (State the property used in each step).

(b) A cuboid , its height is 10 cm., the perimeter of its base is 32 cm. and the length of its base is 9 Find :

(1) The lateral surface area of the cuboid.

(2) The total surface area of the cuboid.

---

5 (a) Find in $\mathbb{Z}$ the solution set of the equation : $2x + 12 = 8$

(b) ***The following table shows ratios of the number of students participated in school activities :***

Activity	Cultural	Sports	Social	Arts
The ratio	25 %	30 %	20 %	25 %

Represent these data by circular sectors.

9 Ismailia Governorate



Answer the following questions : (Calculators are permitted)

1 ***Complete the following :***

(a) $(-5) \times |-4| =$ ....

(b) The image of the point (1 , – 2) by translation (3 , 4) is ....

(c) The measure of the angle of the circular sector whose area represents $\frac{1}{6}$ from the area of the circle = ...

(d) Tossing a regular die once , then the probability of appearance of a number less than 3 is ....

---

2 ***Choose the correct answer between brackets :***

(a) $\mathbb{N} - \mathbb{Z}^+ =$ .... ($\mathbb{Z}$ *or* $\mathbb{N}$ *or* $\{0\}$ *or* $\varnothing$)

(b) The least prime number is .... (1 *or* 2 *or* 3 *or* 5)

(c) Number of axes of symmetry for the rhombus is ....

(zero *or* 1 *or* 2 *or* 4)

(d) The greatest integer that satisfies the inequality $5x <$ zero is ....

(– 1 *or* zero *or* 1 *or* 5)

3 (a) Find the result of : $\frac{7^6 \times (-7)^4}{7^5 \times 7^3}$

(b) Find the solution set of the following equation : $4x - 7 = 5$ (in $\mathbb{Z}$)

---

4 (a) The sum of edge lengths of a cube is 60 cm. Calculate its lateral area.

(b) Find the solution set of the following inequality : $x + 3 \geq 1$ (in $\mathbb{Z}$)

---

5 (a) A box contains balls numbered from 1 to 9 , one ball is selected at random. What is the probability that the selected ball :

(1) Carries an even number.

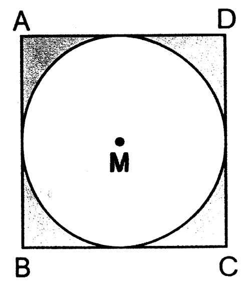
(2) Carries a number greater than 6

(b) ***In the opposite figure :***

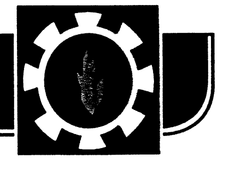
A circle M is drawn inside a square ABCD

, AB = 20 cm.

Calculate the area of the shaded part ($\pi \simeq 3.14$)



10 Suez Governorate



Answer the following questions : (Calculator is allowed)

1 ***Complete the following :***

(a) $(-3) \times (-5) =$ ....

(b) $\frac{a^m}{a^n} = a^{\cdots\cdots}$ where m , n $\in \mathbb{Z}^+$, m > n

(c) The image of the point A (2 , – 1) by the translation (x – 1 , y + 3) is ....

(d) .... is an experiment in which we can determine all its possible outcomes before carrying it , but we can't predict in certainly which of these outcomes will occur when the experiment is carried out.

---

2 ***Choose the correct answer :***

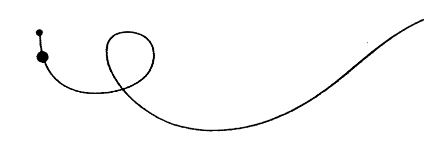
(a) $6^2 \times 6 =$ .... (12 *or* 18 *or* 36 *or* 216)

(b) If $5x - 7 = 13$, then $x =$ .... (6 *or* 5 *or* 4 *or* 8)

(c) The lateral area of cuboid = perimeter of the base × ....

(height *or* length *or* width *or* the base)

(d) A fair die is thrown once , then the probability of appearing the number 3 equals .... (zero *or* $\frac{1}{6}$ *or* $\frac{5}{6}$ *or* 1)

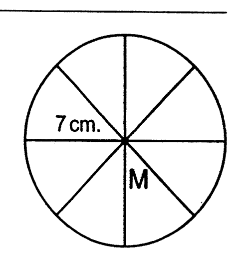


3 (a) Find the solution set of the inequality : $2x + 1 < 5$ where $x \in \mathbb{N}$, then represent the solution set on the number line.

(b) Find the solution set in $\mathbb{Z}$ of the equation : $2x + 9 = 3$

---

4 ***In the opposite figure :***



A circle of radius length 7 cm. is divided into 8 equal circular sectors.

(1) Find the surface area of the circle M

(2) Find the area of one circular sector.

---

5 (a) Arrange the following numbers in an ascending order :

$|-9|$, 2^2 , -5 , zero and $|7|$

(b) ***The following table shows the percentages of the production of electric sets (4 kinds) :***

Type of the set	TV	Washing machine	Refrigerator	Cooker
Percentage of the production	35 %	25 %	15 %	25 %

Represent these data by pie charts.

11 Port Said Governorate



Answer the following questions :

1 ***Complete the following :***

(a) $\mathbb{Z}^- \cap \mathbb{N} =$ ....

(b) A circle of diameter length 8 cm. , then its area = ... π cm²

(c) The additive identity + the multiplicative identity = ...

(d) .... is a subset of the set of sample space , the number of its elements represents number of times its occurrence.

---

2 ***Choose the correct answer from those given :***

(a) $(-1)^3 + (1)^3 =$ .... (zero *or* 1 *or* -1 *or* 2)

(b) If $x + 2 = |-4|$, then $x =$ .... (-2 *or* 2 *or* -6 *or* 6)

(c) If $a \in \{2 , -5 , -3\} \cap \{5 , -2 , -3\}$, then a = ...

(-3 *or* 2 *or* 5 *or* -5)

(d) At throwing a fair die and observing the upper face , then the probability of getting a number greater than 6 equals ....

(0.5 *or* $\varnothing$ *or* 1 *or* zero)

3 (a) Find the result of the following : $\frac{(-2)^7 \times (-2)^5}{(-2)^9}$

(b) The length of a room is 5 metres and its width is 4 metres and its height is 3 metres , it is wanted to paint its walls and ceiling with painting , the cost of painting one squar metre is L.E. 15 Calculate the cost of painting.

---

4 (a) Find the solution set of the inequality : $x + 4 < 7$ where $x \in \mathbb{N}$, then represent it on the number line.

(b) In the cartesian coordinates plane , locate each of the following points A (2 , 3) , B (4 , 3) , C (4 , 7) , then find the image of Δ ABC by the translation (0 , – 4)

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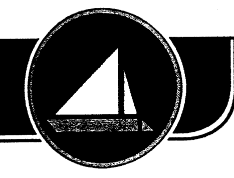
5 (a) Find the solution set in $\mathbb{Z}$ of the equation : $2x + 9 = 3$

(b) ***The following table shows the percentages of production of a factory for three kinds of electric water heater :***

The kind	First	Second	Third
The percentage of the production	25 %	30 %	45 %

Represent these data by circular sectors.

12 Damietta Governorate



Answer the following questions : (Calculators are permitted)

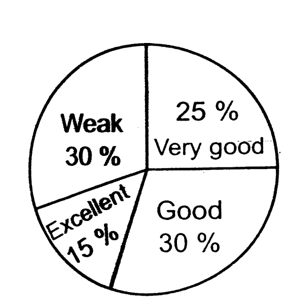
1 ***Complete each of the following :***

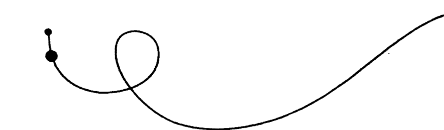
(a) The smallest non-negative integer is ....

(b) The set of even numbers (E) – the set of odd numbers (O) = ...

(c) A circle , its area is 25 π cm^2 , then the length of its radius is .... cm.

(d) The opposite figure represents the grades of 40 students in mathematics exam , without using the protractor , then the measure of the central angle of the sector representing the grade "very good" = ...°





2 ***Choose the correct answer from those given :***

(a) $3^2 + 3^2 + 3^2 = 3^{\cdots\cdots}$ (8 **or** 6 **or** 4 **or** 3)

(b) The probability of the impossible event = ...

(zero **or** 1 **or** 2 **or** $\varnothing$)

(c) A cube , its volume is 1000 cm^3 , then its lateral area = ... cm^2

(600 **or** 500 **or** 400 **or** 200)

(d) The solution set of the equation : $2x = -8$ in $\mathbb{N}$ is ....

($\{-4\}$ **or** $\{4\}$ **or** $\{2\}$ **or** $\varnothing$)

---

3 (a) Find the result of each of the following :

(1) $\frac{(-5)^4 \times 5^2}{(-5)^5}$ **(2)** $(-4) \times [(4) + (-5)]$

(b) Find the solution set of the equation : $2x + 3 = 9$

Given that the substation set is $\{2 , 3 , 4\}$

---

4 (a) Find the solution set of the inequality : $3x + 5 \geq 23$ where $x \in \mathbb{Z}$

(b) A box truck for carrying goods in the form of cuboid , its inner dimensions are 4 m. , 3 m. and 2 m. It is wanted to cover its sides and ceiling with an iron sheets , the cost price of square metre is L.E. 30

Calculate the cost of required iron sheets.

---

5 (a) A basket contains 15 identical balls numbered from 1 to 15 , if one of the balls is chosen randomly.

Find the probability that the chosen ball :

(1) Carried a prime number.

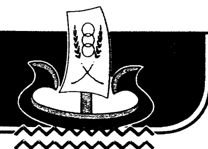
(2) Carried a number divisible by 5

(b) Determine in the coordinates plane the rectangle ABCD where

A = (4 , 1) , B = (4 , 3) , C = (1 , 3) , D = (1 , 1)

, then find the image of the rectangle ABCD by translation $(x + 3 , y + 3)$

13 Kafr El-Sheikh Governorate



Answer the following questions : (Calculators are permitted)

1 ***Complete each of the following :***

(a) The sample space is ....

(b) The sum of measures of all angles accumulative at the centre of a circle equals ....

(c) $-6, -4, -2$, ... , ... (in the same pattern)

(d) If $a = 3$, $b = -2$, then the value of : $3ab$ = ...

2 ***Choose the correct answer from those given :***

(a) $2^3 + 2^2$ = ... (10 *or* 12 *or* 32 *or* 64)

(b) All the following numbers satisfy the inequality : $x > -3$ except ....

(zero *or* -1 *or* -2 *or* -4)

(c) If A = S, then P (A) = ... (zero *or* 1 *or* 2 *or* 3)

(d) The image of the point $(-4, 3)$ by translation $(-1, -4)$ is ....

($(-5, -7)$ *or* $(-5, -1)$ *or* $(-7, 3)$ *or* $(-3, -1)$)

3 (a) Find the solution set of the equation : $2x + 9 = -23$ in $\mathbb{Z}$

(b) Find the solution set of the inequality : $3x - 2 \geq 4$ in $\mathbb{Z}$

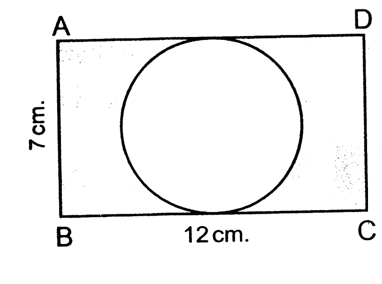
4 (a) ***In the opposite figure :***

ABCD is a rectangle

, its length 12 cm. and its width 7 cm.

A circle is drawn to touch the sides $\overline{AD}$ and $\overline{BC}$

Calculate the area of shaded part where $\left(\pi = \frac{22}{7}\right)$



(b) Use the properties of addition operation in $\mathbb{Z}$ to find the result of :

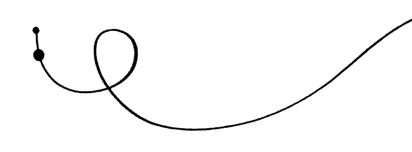
$(-17) + 19 + 17$ (State the property used in each step)

5 (a) The total area of a cube is 486 cm^2. Find the area of one face and its lateral area.

(b) ***The following table shows the percentage of the production of a factory of house electrical sets :***

The kind of set	Washing machine	Heater	Oven	Mixture
The percentage	30 %	15 %	40 %	15 %

Represent the pervious data by using the circular sectors.



14 El-Beheira Governorate



Answer the following questions :

1 ***Choose the correct answer :***

(a) The image of the point (3 , – 2) by the translation (– 3 , 2) is .... ((0 , 0) *or* (2 , 0) *or* (3 , 0) *or* (6 , 4))

(b) $\mathbb{Z} - \mathbb{N} =$ .... ({zero} *or* $\mathbb{Z}^+$ *or* $\mathbb{Z}^-$ *or* $\mathbb{Z}$)

(c) The sum of the measures of all angles accumulative at the centre of a circle equals .... (90° *or* 108° *or* 180° *or* 360°)

(d) $3^2 + 3^2 + 3^2 =$ .... (2^6 *or* 4^6 *or* 3^3 *or* 2^9)

---

2 ***Complete the following :***

(a) If $3x + 9 = 0$, $x \in \mathbb{Z}$, then $x =$ ....

(b) $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, ... (in the same pattern)

(c) If $\varnothing$ is the empty set , then P ($\varnothing$) = ...

(d) If $a \in \{2 , -5 , -3\} \cap \{5 , -2 , -3\}$, then a = ...

---

3 (a) Find the solution set of the inequality : $3x - 2 < 7$, where $x \in \mathbb{Z}$

(b) Use the properties of addition operation in $\mathbb{Z}$ to find the result of 119 + 191 + (– 119) (State the property used in each step)

---

4 (a) Find the solution set of the equation : $2x + 9 = 3$, where $x \in \mathbb{N}$

(b) Calculate the lateral area and the total area of a case in the shape of a cuboid if its base is a square of side length 6 cm. and its height is 10 cm.

---

5 (a) ***In the opposite figure :***

ABCD is a square of side length 20 cm.

Calculate the area of the shaded part.

(Consider $\pi \simeq 3.14$)

(b) A box contains 5 white balls , 3 blue balls and 8 red balls , all the balls are identical. A ball is drawn blindly.

What is the probability that the drawn ball is :

(1) White. **(2)** Not red.

15 El-Fayoum Governorate



Answer the following questions : (Calculators are permitted)

1 ***Choose the correct answer form these between 6 rackets :***

(a) $\mathbb{Z} - \mathbb{N} =$ .... ($\mathbb{Z}^+$ *or* $\mathbb{Z}^-$ *or* $\mathbb{Z}$ *or* $\varnothing$)

(b) $(-1)^8$ .... $(-1)^9$ ($=$ *or* $<$ *or* $>$ *or* $\leq$)

(c) A circle whose radius length is 7 cm. , then the surface area of this circle = ... cm^2. $\left(\pi = \frac{22}{7}\right)$ (154 *or* 38.5 *or* 22 *or* 49)

(d) In an experiment of throwing a fair die once , if the event A is event of appearance of a number greater than 6 , then P (A) = ...

($\frac{5}{6}$ *or* $\frac{1}{2}$ *or* $\frac{1}{6}$ *or* zero)

2 ***Complete each of the following :***

(a) The equation : $x + 3 = 5$ of the .... degree.

(b) $|-4| + (-11)^{zero} =$ ....

(c) If $a \in \{2 , -3\} \cap \{5 , -3\}$, then a = ...

(d) The sum of the measure of the accumulative angles about the centre of the circle = ...°

3 (a) Find the solution set of the inequality : $x + 4 \geq 5$ in $\mathbb{Z}$

(b) Find the result of the following : $\frac{(-3)^3 \times (-3)^2}{(-3)^4}$

4 (a) A cube whose edge length equals 10 cm.

Calculate its lateral surface area and total surface area.

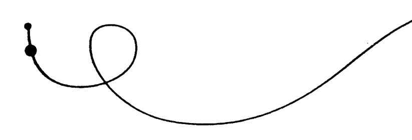
(b) Find the solution set of the equation : $2x + 9 = 19$ in $\mathbb{Z}$

5 (a) Determine in the coordinates plane the positions of the points A (1 , 4) , B (1 , 2) , C (3 , 2) , then find the image of the triangle ABC by translation $(x + 2 , y + 2)$

(b) ***The following table shows the percentage of the favorite sport for the pupils in one of the schools :***

The favorite sport	Football	Handball	Basketball
The percentage	50 %	30 %	20 %

Represent these data by circular sectors.



16 Beni Suef Governorate



Answer the following questions :

1 ***Complete the following :***

(a) 2 , 6 , 18 , 54 , ………… , ………… (in the same pattern)

(b) 3 km. = ………… metres.

(c) A die is thrown one time, then the probability of appearing of the number 5 = …………

(d) The surface area of the circle of radius length 7 cm. = ………… π cm^2.

---

2 ***Choose the correct answer from those given :***

(a) $(-19)^{zero} + (19)^{zero} =$ ………… (zero *or* – 1 *or* 1 *or* 2)

(b) If $\varnothing$ is the empty set , then P ($\varnothing$) = ………… (zero *or* 2 *or* 1 *or* $\frac{1}{2}$)

(c) If $x = -1$, y = 2 , then the value of x + y = …………

(2 *or* 3 *or* 1 *or* – 1)

(d) The number of lines of symmetry of the isosceles triangle = …………

(3 *or* 1 *or* 2 *or* zero)

---

3 (a) Use the properties of addition in $\mathbb{Z}$ to find the result of :

(– 17) + 19 + 17 (State the property used in each step)

(b) A cuboid , its length is 6 cm., its width is 4 cm. and its height is 8 cm.

Find : **(1)** The lateral area. **(2)** The total area.

---

4 (a) Find the solution set of the inequality : $2x + 9 < 1$ where $x \in \mathbb{Z}$, then represent the solution set on the number line.

(b) If the image of the point (a , b) by the translation (3 , – 2) is the point (– 4 , 5) Find the coordinates of the point (a , b)

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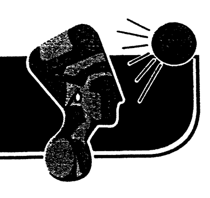
5 (a) Given that the substitution set is L = {0 , 1 , 2 , 3}

Find the solution set of the equation : $x + 3 = 5$

(b) A clerk in on institution , she contributes with her husband by her salary as follows :

25 % for house rent , 50 % for food and expenses and 25 % for savings.

Represent these data by using the circular sectors.



17 El-Menia Governorate

Answer the following questions :

1 ***Choose the correct answer from those given :***

(a) $\mathbb{N} \cup \mathbb{Z} =$ .... ($\mathbb{Z}$ or $\mathbb{N}$ or $\mathbb{Z}^-$ or $\mathbb{Z}^+$)

(b) The set of solution of the equation : $x + 3 = 5$ in $\mathbb{Z}$ is ....

({– 8} or {– 2} or {2} or {8})

(c) If a dice is tossed once , then the probability of getting an even number = ... (0 or 2 or 1 or 0.5)

(d) $3 \times 4 + 30 \div 10 =$ .... (15 or 31 or 30 or 21)

2 ***Complete the following :***

(a) $|-5| + |7| =$ ....

(b) $3.75 + 2.5 =$ .... $\simeq$ .... (Approximate to nearest $\frac{1}{10}$)

(c) If the perimeter of one face of a cube = 12 cm. , then its total area = ... cm².

(d) If the probability that the pupil solve the problem is 0.7 , then the number of problems expected to be solved from the same kind from 20 problems equals ....

3 (a) Find the result of : $\frac{(2)^6 \times (2)^5}{2 \times (2)^3}$

(b) The perimeter of the base of a cuboid is 32 cm. , its height = 10 cm. , the length of its base = 9 cm. Calculate :

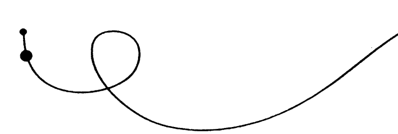
(1) Its lateral area. **(2)** Its total area.

4 (a) Find the solution set in $\mathbb{Z}$ of the equation : $2x + 9 = 3$

(b) Find in $\mathbb{N}$ the set of solution of the inequality : $3x - 2 < 7$

5 (a) Find the area of a carpet in the shape of a circle of radius length 3.5 m.

(Consider $\pi = \frac{22}{7}$)



(b) ***The following table shows the percentage of the production of a factory of electric sets (4 kinds) :***

Type the set	TV	Washing machine	Refrigerator	Cooker
Amount of the production	35 %	25 %	15 %	25 %

Represent these data by pie charts.

18 Assiut Governorate



Answer the following questions : (Calculator is allowed)

1 ***Choose the correct answer from those given :***

(a) $\mathbb{Z}^+ \cup \{0\} =$ ………… ($\mathbb{N}$ **or** $\mathbb{Z}^-$ **or** $\mathbb{Z}$ **or** $\mathbb{Z}^+$)

(b) The number which satisfies the inequality $x > -3$ is …………

(-3 **or** -4 **or** -2 **or** -5)

(c) If $2x = -4$, $x \in \mathbb{Z}$, then the set of solution is …………

($\{2\}$ **or** $\{-2\}$ **or** $\{4\}$ **or** $\{-4\}$)

(d) If $x = -1$, $y = 2$, then the negative number in the following is …………

($x^2 + y^2$ **or** $x + y$ **or** $x^2 + y$ **or** $x - y$)

---

2 ***Complete the following :***

(a) The image of the point $(2 , -1)$ by the translation $(-3 , 5)$ is (….. , …..)

(b) In an experiment of throwing a fair die once. If A is the event of appearing a number less than 2 , then P (A) = …………

(c) The result of : $-4 [3 + (-1)] =$ …………

(d) The sum of the edge lengths of a cube = 24 cm., then the area of one face = ………… cm^2

---

3 (a) **(1)** Find the result of : $\frac{5^3 \times 5^4}{5^7}$

(2) A circle , its diameter length is 14 cm. Calculate its surface area.

(Consider $\pi = \frac{22}{7}$)

(b) Find the solution set in $\mathbb{N}$ of the equation : $x + 1 = |-3|$

---

4 (a) Find the set of solution of the inequality : $x + 2 \le 6$, $x \in \mathbb{N}$

(b) A box contains 4 white balls , 7 red balls , one ball is drawn randomly. Find the probability that the drawn ball is :

(1) White. (2) Not white.

5 (a) The perimeter of the base of a cuboid is 32 cm. , its height = 10 cm. and the length of its base = 9 cm. Calculate :

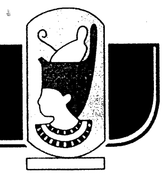
(1) Its lateral area. (2) Its total area.

(b) ***The following table shows the percentage of the number of students participants in the school activities :***

The activity	Culture	Sport	Social	Art
The percentage	10 %	45 %	20 %	25 %

Represent these data by circular sectors.

19 Souhag Governorate



Answer the following questions : (Calculator is allowed)

1 ***Complete the following :***

(a) $\mathbb{Z} - \mathbb{N} =$ ....

(b) The inequality is a mathematical sentence ....

(c) If a die is rolled once , then the probability of getting even number = ...

(d) A prime number between 1 and 10 is ....

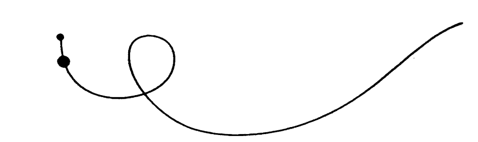
2 ***Choose the correct answer between brackets :***

(a) $3^2 + 3^2 + 3^2 =$ .... (2^6 *or* 4^6 *or* 3^3 *or* 2^9)

(b) The measure of the angle for the circular sector of a quarter of the circle = ... (30° *or* 45° *or* 60° *or* 90°)

(c) The image of point (3 , – 2) by translation (4 , 2) is .... ((7 , 0) *or* (– 7 , 0) *or* (– 1 , 4) *or* (1 , 7))

(d) A rhombus whose diagonal lengths are 6 cm. and 8 cm. , then its area = ... cm^2 (48 *or* 24 *or* 42 *or* 96)



3 (a) Find the result of the following : $\frac{(-2)^7 \times (-2)^5}{(-2)^9}$

(b) Find the solution set of the equation :

$2x + 4 = -14$ (Where $x \in \mathbb{Z}$)

---

4 (a) A cuboid whose length is 15 cm. , its width is 5 cm. and its height is 6 cm. Find :

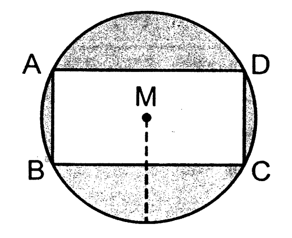
(1) The lateral area. **(2)** The total area.

(b) Find the solution set in $\mathbb{N}$ of the inequality : $3x - 2 < 7$

---

4 (a) ***In the opposite figure :***

M is a circle its radius length is 5 cm. , a rectangle was drawn inside it. Its length is 8 cm. and its width is 4 cm. Find the area of the shaded part (consider $\pi = 3.14$)



(b) ***The following table shows the percentage of the production of one factory for 4 kinds of the electric sets :***

Kind of the set	TV	Washing machine	Refrigerator	Cooker
The percentage	35 %	25 %	15 %	25 %

Represent these data by pie chart.

20 Qena Governorate



Answer the following questions : (Calculator is allowed)

1 ***Choose the correct answer between brackets :***

(a) $\mathbb{Z}^+ \cap \mathbb{Z}^- =$ .... (zero **or** 1 **or** – 1 **or** $\varnothing$)

(b) If $x + 2 = |-4|$, then $x =$ .... (– 2 **or** 2 **or** – 6 **or** 6)

(c) Which of the following can be probability of an event ?

(1.2 **or** $\frac{17}{16}$ **or** 5^0 **or** 101 %)

(d) The image of the point (– 4 , 3) by the translation (– 1 , – 4) is ....

((– 5 , 7) **or** (– 5 , – 1) **or** (– 7 , 3) **or** (– 3 , – 1))

2 ***Complete each of the following :***

(a) $7^0 + (-7)^0 =$ ....

(b) The total area of the cube = area of one face × ....

(c) A fair die is thrown once , then the probability of appearance of even prime number is ....

(d) The integer number which before zero is .... and the integer number which after zero is ....

---

3 (a) Find the value of :

(1) $\frac{3^4 \times (-3)^5}{3^7}$

(2) $6 \times [(-2) + (-7)]$ by using the properties of multiplication in $\mathbb{Z}$

(b) Find the S.S. of the equation : $2x + 9 = -23$, $x \in \mathbb{N}$

---

4 (a) Find the S.S. of the inequality : $3x - 2 \geq 4$, $x \in \mathbb{Z}$

(b) The length of a cuboid is 9 cm. , its width is 4 cm. , its height is 8 cm. Find its total area.

---

5 (a) A circle with circumference 44 cm. , calculate its surface area.

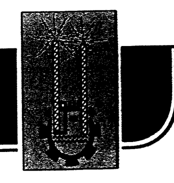
(b) ***The following table shows the percentage of eggs production in three farms :***

The farm	First	Second	Third
The percentage of production	25 %	....	40 %

(1) Complete the table.

(2) Represent these data by using the circular sectors.

21 Aswan Governorate



Answer the following questions : (Calculator is allowed)

1 ***Choose the correct answer from those given :***

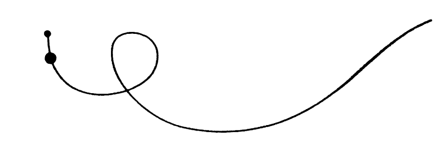
(a) If $a \in \{2 , -5 , -3\} \cap \{5 , -2 , -3\}$, than a = ...

(2 *or* − 3 *or* − 5 *or* 5)

(b) $(-19)^{zero} + (19)^{zero} =$ .... (− 1 *or* zero *or* 1 *or* 2)

(c) A circle of diameter length 8 cm. , then its area = ... π cm^2

(4 *or* 8 *or* 16 *or* 64)



(d) A fair die is thrown once , then the probability of appearing of the number 5 equals .... (zero *or* $\frac{1}{6}$ *or* $\frac{5}{6}$ *or* 1)

2 ***Complete the following :***

(a) 89.25 ≃ .... (to the nearest tenth)

(b) 7 , 3 , – 1 , ... , ... (in the same pattern)

(c) The probability of the impossible event = ...

(d) If $x + 3 = |-7|$, then x = ...

3 (a) Find the result of : $\frac{(-2)^5 \times (-2)^7}{(-2)^9}$

(b) If the image of the point (a , b) by the translation (3 , – 2) is the point (– 4 , 5) , find the coordinates of the point (a , b)

4 (a) Find the solution set of the inequality : $4x + 1 < 13$ (where $x \in \mathbb{Z}$)

(b) A cube of edge length 6 cm. , find its lateral area and its total area.

5 (a) Find the solution set of the equation : $2x + 1 = -9$ in $\mathbb{Z}$

(b) ***The following table shows the percentage of the production of chickens in 4 farms monthly :***

Farm	1st	2nd	3rd	4th
The percentage	40 %	25 %	20 %	15 %

(1) Represent these data by circular sectors.

(2) If the total production of these farms in one of months was 12000 chickens. Find the production of first farm of chicken.

22 Red Sea Governorate

Answer the following questions :

1 ***Choose the correct answer from those given :***

(a) When tossing a die once , then the probability of getting a number divisible by 5 equals .... ($\frac{1}{2}$ *or* $\frac{1}{3}$ *or* $\frac{5}{6}$ *or* $\frac{1}{6}$)

(b) If the perimeter of base of a cube is 20 cm. , then its lateral area = ... cm^2 (80 *or* 120 *or* 100 *or* 150)

(c) The perimeter of a rectangle is 16 cm. , its width = 3 cm. , then its area = ………… cm^2. (15 *or* 39 *or* 48 *or* 24)

(d) If n is a negative integer number. Which of the following is the smallest ?

($3 + n$ *or* $3n$ *or* $\frac{-3}{n}$ *or* $3 - n$)

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2 ***Complete the following :***

(a) $\frac{(-3)^3 \times (-3)^4}{(-3)^5} =$ …………

(b) If $7x = -42$, then the value of $x =$ …………

(c) If $\varnothing$ is the empty set , then $P(\varnothing) =$ …………

(d) The image of the point $(8, -10)$ by translation $(-3, 4)$ is …………

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3 (a) Find the result of : $(5 + |-3|) \times (-11)$

(b) Find the solution set of the equation in $\mathbb{Z}$: $4x - 1 = 15$

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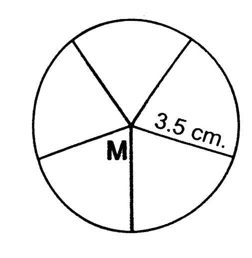
4 (a) Find the solution set of the inequality in $\mathbb{N}$: $3x + 2 \leq 11$

(b) A cuboid-shaped box without a lid , its length is 7 cm. , its width is 3 cm. and its height is 4 cm. Calculate its total area.

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5 (a) ***In the opposite figure :***

A circle M of radius length 3.5 cm. is divided into five equal circular sectors , find the surface area of one sector $\left(\pi = \frac{22}{7}\right)$



(b) ***The following table shows the percentage of production of meat in 3 slaughter houses during a month :***

The slaughter	First	Second	Third
The percentage	20 %	30 %	50 %

Represent these data by pie charts.